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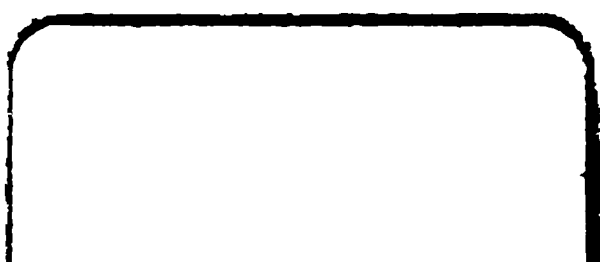
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~~Water~~ Erie, Pa. Water bureau.

ANNUAL REPORT

276

—OF THE—

COMMISSIONERS

—OF—

WATER & WORKS.

Compliments of

T. W. SHACKLETT,

Commissioner


—FOR THE—

YEAR ENDING DECEMBER 31, 1893.

ERIE, PA.:

DISPATCH PUBLISHING COMPANY, LIMITED.

1894.

 Erie, Pa. Water bureau.

ANNUAL REPORT

2nd

—OF THE—

COMMISSIONERS

—OF—

WATER & WORKS,

—IN THE—

CITY OF ERIE,

—TO THE—

MAYOR AND COUNCILS,

—FOR THE—

YEAR ENDING DECEMBER 31, 1893.

— — — — —

ERIE, PA.:

DISPATCH PUBLISHING COMPANY, LIMITED.

1894.

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176105

1906

COMMISSIONERS OF WATER WORKS.

The Commissioners of Water Works in the City of Erie are appointed by the Court of Common Pleas of Erie County, Pa., for a term of three years, one member being named annually, in May.

SERVED IN

THE COMMISSIONERS FROM ORGANIZATION TO DECEMBER 31, 1893.

YEAR			
1867	*Wm. L. Scott,	Henry Rawle,	Wm. W. Reed,
1868	*John C. Selden,	Henry Rawle,	Wm. W. Reed,
1869	*John C. Selden,	Henry Rawle,	Wm. W. Reed,
1870	*John C. Selden,	Henry Rawle,	Wm. W. Reed,
1871	*†John C. Selden,	Henry Rawle,	Wm. W. Reed,
1872	Matthew R. Barr,	John Gensheimer,	Wm. W. Reed,
1873	Matthew R. Barr,	John Gensheimer,	Wm. W. Reed,
1874	Matthew R. Barr,	John Gensheimer,	Wm. W. Reed,
1875	Matthew R. Barr,	John Gensheimer,	Wm. W. Reed,
1876	Matthew R. Barr,	John Gensheimer,	Wm. W. Reed,
1877	M. Liebel,	John Gensheimer,	Wm. W. Reed,
1878	M. Liebel,	*J. M. Bryant,	Wm. W. Reed,
1879	M. Liebel,	*J. M. Bryant,	*G. W. F. Sherwin,
1880	M. Liebel,	*J. M. Bryant,	*G. W. F. Sherwin,
1881	M. Liebel,	Benjamin Whitman,	*G. W. F. Sherwin,
1882	M. Liebel,	Benjamin Whitman,	*G. W. F. Sherwin,
1883	M. Liebel,	Benjamin Whitman,	*G. W. F. Sherwin,
1884	M. Liebel,	Benjamin Whitman,	*G. W. F. Sherwin,
1885	M. Liebel,	Benjamin Whitman,	George W. Starr,
1886	C. Kessler,	Benjamin Whitman,	George W. Starr,
1887	C. Kessler,	C. J. Brown,	George W. Starr,
1888	C. Kessler,	C. J. Brown,	George W. Starr,
1889	C. Kessler,	C. J. Brown,	George W. Starr,
1890	C. Kessler,	C. J. Brown,	George W. Starr,
1891	C. Kessler,	C. J. Brown,	Wm. Hardwick,
1892	T. W. Shacklett,	C. J. Brown,	Wm. Hardwick,
1893	T. W. Shacklett,	C. J. Brown,	Wm. Hardwick,

*Mr. Selden resigned before the expiration of his second term; Mr. Barr was substituted by the other Commissioners, and afterwards appointed by the Court.

*Dead.

THE PRESENT COMMISSIONERS.

C. J. BROWN, President.

WM. HARDWICK.

T. W. SHACKLETT.

OFFICE—City Hall

OFFICE HOURS—From 8 00 A. M., to 5 00 P. M.; on Mondays to 9 00 P. M.

REGULAR MEETINGS OF THE COMMISSIONERS—Every Saturday at 3 00 P. M., and the first day of each month at 11 00 A. M., except when it occurs on Sunday, then they meet the following day.

OFFICERS AND SALARIES PAID THEM IN 1898.

Commissioners—C. J. Brown.....	\$ 925 00
Wm. Hardwick.....	850 00
T. W. Shacklett.....	800 00
Secretary and Treasurer—Wm. Himrod.....	1,800 00
Assistant Secretary—Geo. C. Gensheimer.....	1,320 00
Book Keepers—John Kolb.....	960 00
R. H. Bear.....	840 00
Clerk—M. L. Whitley.....	600 00
Inspectors—John D. Spafford.....	720 00
Wm. McCleery.....	720 00
P. F. Weinheimer.....	720 00
Meter Taker—Perry E. Thurber, 6 months.....	360 00
Superintendent of Street Work—R. T. Walker.....	1,200 00
Foremen of Street Work—Fred Simons, per day.....	2 50
Fred D. Gross, per day.....	2 50
Chief Engineer—F. A. Roth.....	1,200 00
Assistant Engineers—Geo. R. Miller.....	900 00
John Kelly.....	900 00
Firemen—R. W. Simons.....	600 00
Joseph Burns.....	600 00
Jacob Mullen.....	600 00
Watchman at Pumping Station—Michael Flynn.....	600 00
Keeper of Reservoir—Samuel Phister.....	420 00
Janitress—Mrs. Matilda Sager.....	144 00

ANNUAL REPORT.

To the Mayor, Select and Common Councils of the City of Erie, Penn'a.:

GENTLEMEN:--We herewith present you with a detailed statement of our official acts for the year ending December 31, 1893.

The increase in receipts for water over that of the year 1892 was nearly five and one-half per cent., which was, however, a much smaller gain than that made the preceding year. Much of this, we think, is attributable to the general depression in business of all kinds. Our receipts reached the sum of one hundred eleven thousand, two hundred forty-seven and forty-three one-hundredths (\$111,247.43-100) dollars, and is the second year in our history that they have exceeded a hundred thousand dollars. We do not think they will ever be below this latter figure, and hope that they may continue to steadily increase, thus clearly showing the expansion of our growing city.

In our report last year we showed that during the month of July, 1892, we delivered in one day 8,218,875 gallons of water, which was almost the maximum guaranteed duty of our entire plant; in the corresponding month of 1893 we delivered in one day 9,775,761 gallons, which was over three quarters of a million gallons more than our guaranteed daily capacity at that time.

We now have four (4) pumping engines, with a guaranteed daily capacity of twenty-one million (21,000,000) gallons. They are as follows:

Two (2) Cornish Bull, each having a daily capacity of two million (2,000,000) gallons, and were erected in 1868 by the West Engine Company of Norristown, Penn'a. They together with the boilers and connections all ready for use, cost fifty-five thousand

(\$55,000.00) dollars. At the time these engines were purchased they were "classed with the most efficient and reliable, where heavy pumping machinery was required," and it was fully expected that they would be all the pumping engines that would be required till our city had a population of fifty thousand people.

In the report to you for the year ending December 31, 1884, the Commissioners stated that the demand for water had increased to such an extent that it was not prudent to depend on their then pumping facilities. Their report for 1885 was more urgent for a new pump of much larger capacity than those in daily use, and on July 19, 1886, they awarded a contract to the Holly Manufacturing Co., of Lockport, N. Y., for a Gaskill Horizontal Compound Pumping Engine, with a daily capacity of five million (5,000,000) gallons, against a head of 237 feet. This engine, all complete ready for use, cost twenty-four thousand, eight hundred and fifty (\$24,850.00) dollars, and was accepted by the Commissioners June 11, 1887, after having been thoroughly tested; and has been in constant use since.

We stated in our last report that we had contracted with Henry R. Worthington, of New York, for a Horizontal Compound Condensing High Duty Pumping Engine, with a daily capacity of twelve million (12,000,000) gallons, against a head of 260 feet. This engine has been put in place, but as the thirty (30) day working test required by the specifications had not been completed by the close of the year, we were unable to determine whether the engine would be accepted or not, therefore in our accounts for the year it does not appear. We engaged Mr. H. R. Barnhurst, of this city, an expert mechanical engineer, who, in conjunction with our Mr. F. A. Roth, chief engineer of the Pumping Station, represented us in the official tests of this engine. They began the tests November 29, 1893, the full report of which is herewith attached, to which we respectfully invite your careful perusal.

Allow us to add that on January 6, 1894, we accepted the engine, being satisfied that the Henry R. Worthington people had given us all that the contract called for, and on Saturday, January 13, 1894, we paid them the first installment as agreed, viz.: Twenty-three thousand, one hundred and fifty (\$23,150.00) dollars, which is one-half the contract price of the engine ready for use.

the filth of the city beyond the limits of the harbor, which would ultimately improve the water and remove the probability of contagion from our doors.

Feeling that a more thorough system should be adopted in the care and preservation of the meters, the office of meter taker was created the 26th day of June last, and work in this line began the first of the following month. In addition to attending to meters, it is his duty to look after all the fire hydrants, also to see that persons using water for building purposes secure permits for the same.

The first six months' work in the care of meters has convinced us that we did not commence it too soon, and that it has been a profitable investment. A reading and examination of the meters are taken monthly, instead of quarterly, as was the usual custom; and whenever any marked increase or decrease in the consumption of water is discovered, the cause is immediately looked up, any defect in the meter and its surroundings are detected and promptly remedied.

We look upon the care of fire hydrants as of the utmost importance—they must be ready for instant use at all seasons of the year. A failure on the part of a fire hydrant to do its duty when called upon is to be deplored, and we trust that the time will never come when it can be recorded that one in this city was found defective.

It is our purpose to have all fire hydrants and connections for fire protection on private property sealed, so that they cannot be used without our knowledge, because these appliances are not to be used for any other purpose than to extinguish fire. When parties wish to test their fire apparatus, upon due notice given at the office and payment for the same, the meter taker will be sent to the property, remove the seals, and when the test has been made, replace the seals. In all cases of fire it is expected that the seals will be broken and the water used freely; for this there is no charge.

A word in regard to the price of water furnished by meter: For some time past we have had under consideration the propriety of asking your approval of a change in the meter rates, making one price for all, regardless of the quantity consumed. Our present rate is based on the average daily consumption in

**Monthly Receipts from all Sources During the Year Ending
December 31, 1893.**

MONTH.	ASSESSMENT.	METER.	SPECIAL.	PLUMBING.	BUILDING.	TOTAL.
January ..	\$ 13,749 26	\$ 4,128 04	\$ 32 09	\$ 194 10	\$ 11 98	\$ 18,115 47
February.	4,244 48	266 79	4 78	.....	31 64	4,547 69
March....	1,238 94	238 73	13 33	69 57	103 52	1,664 09
April	17,846 41	5,571 85	13 67	3 85	181 63	23,617 41
May	4,237 49	420 37	13 42	19 50	92 76	4,783 54
June.....	1,308 56	1,093 96	17 68	405 54	123 81	2,949 55
July.....	15,993 19	3,505 31	15 30	11 10	87 26	19,612 16
August ...	4,029 76	1,161 20	19 22	74 35	48 14	5,332 67
Sept.....	435 17	.....	46 67	221 71	51 23	754 78
Oct	17,903 69	2,785 00	7 25	58 60	56 65	20,811 19
Nov.....	5,682 86	3,299 46	8 39	1,232 29	15 01	10,238 01
Dec.....	474 42	559 22	9 51	227 35	68 33	1,338 83
Total...	\$ 87,144 23	\$ 23,029 93	\$ 201 31	\$ 2,517 96	\$ 871 96	\$ 113,765 39

**Receipts from Each Ward During the Year Ending December
31, 1893.**

WARD.	ASSESSMENT.	METER.	SPECIAL.	PLUMBING.	BUILDING.	TOTAL
1st.	\$ 12,002 40	\$ 3,004 80	\$ 30 17	\$ 28 85	\$ 83 46	\$ 15,149 68
2nd	19,416 76	13,763 21	24 41	1,248 69	210 18	34,663 25
3rd.....	21,370 56	3,705 94	60 30	797 44	215 17	26,149 41
4th.....	16,067 41	872 32	47 49	275 71	168 21	17,431 14
5th.....	8,876 57	1,158 87	21 54	13 04	79 74	10,149 76
6th.....	8,641 50	524 79	17 40	37 95	103 36	9,325 00
7th.....	769 03	.....	.....	116 28	11 84	897 15
Total...	\$ 87,144 23	\$ 23,029 93	\$ 201 31	\$ 2,517 96	\$ 871 96	\$ 113,765 39

**Cash Account of Secretary and Treasurer of Commissioners
of Water Works in the City of Erie, for the Year Ending
December 31, 1893.**

Month.	Receipts.	Deposited with the Treasurer City of Erie.	Balance in Office at Close of Business Each Month.
Balance from 1892.....	\$ 104 42		
January.....	17,115 47	\$ 17,206 80	\$ 1,013 00
February.....	4,547 40	5,472 40	88 32
March.....	1,660 68	1,660 68	82 73
April.....	21,074 07	21,074 07	2,074 07
May.....	7,380 00	7,380 00	20 61
June.....	2,054 13	2,054 13	25 03
July.....	18,328 08	18,328 08	1,308 21
August.....	6,577 47	6,577 47	13 41
September.....	724 32	724 32	63 87
October.....	10,910 12	10,910 12	685 04
November.....	11,181 38	11,181 38	42 57
December.....	1,381 40	1,381 40	
Total.....	\$ 113,800 81	\$ 113,800 81	

**Statement of Account With Treasurer of the City of Erie, Pa.,
for the Year Ending December 31, 1893.**

Month.	Received from Secretary and Treasurer of Commissioners of Water Works.	Paid on Warrants of Commissioners of Water Works.	Monthly Balance.
Balance from 1892.....	\$ 286 56		
January.....	17,206 80	\$ 6,453 27	\$ 11,040 00
February.....	5,472 40	3,044 62	12,567 93
March.....	1,660 68	8,050 75	5,286 86
April.....	21,074 07	13,285 07	13,075 86
May.....	7,380 00	5,796 00	14,650 77
June.....	2,054 13	7,380 28	10,233 62
July.....	18,328 08	6,770 28	21,702 32
August.....	6,577 47	9,393 85	18,075 04
September.....	724 32	11,425 00	8,275 17
October.....	10,910 12	4,744 10	23,450 10
November.....	11,181 38	7,340 56	27,201 01
December.....	1,381 40	7,370 24	21,206 17
Total.....	\$ 114,156 37	\$ 92,860 20	

Amount of Water Rents Collected Each Year, with the Increase and Decrease Since the Commencement of the Works.

					A'MT REC'D.	INCREASE.	DECREASE.
From Jan. 1, 1869, to Dec. 31, 1869.....	*				4,264 47	.....	.....
" " 1870, to " 1870.....					9,237 30	\$ 4,972 83	.....
" " 1871, to " 1871.....					18,138 08	8,900 78	.....
" " 1872, to " 1872.....					21,652 68	3,514 60	.....
" " 1873, to " 1873.....					25,560 40	3,907 72	.....
" " 1874, to " 1874.....					27,938 90	2,378 50	.....
" " 1875, to " 1875.....					29,639 38	1,700 48	.....
" " 1876, to " 1876.....					31,048 76	1,409 38	.....
" " 1877, to " 1877.....					32,276 57	1,227 81	.....
" " 1878, to " 1878.....					29,636 01	.....	\$ 2,640 56
" " 1879, to " 1879.....					33,343 20	3,707 19	.....
" " 1880, to " 1880.....					37,385 00	4,041 80	.....
" " 1881, to " 1881.....					40,385 87	3,000 87	.....
" " 1882, to " 1882.....					43,818 73	3,432 86	.....
" " 1883, to " 1883.....					48,269 89	4,451 16	.....
" " 1884, to " 1884.....					51,852 78	3,582 89	.....
" " 1885, to " 1885.....					53,550 35	1,697 57	.....
" " 1886, to " 1886.....					58,725 00	5,174 65	.....
" " 1887, to " 1887.....					67,121 92	8,396 92	.....
" " 1888, to " 1888.....					73,197 03	6,075 11	.....
" " 1889, to " 1889.....					81,110 68	7,913 65	.....
" " 1890, to " 1890.....					87,279 96	6,169 28	.....
" " 1891, to " 1891.....					93,891 55	6,611 59	.....
" " 1892, to " 1892.....					105,527 03	11,635 48	.....
" " 1893, to " 1893.....					111,247 43	5,720 40	.....
Total.....	\$				1,216,098 97	.....	.....

DISBURSEMENTS —Continued.

Ledger Folio.	Department.	Account.	For the Year 1893.			From beginning of Works to Dec. 31st, 1893.
			Labor.	Material	Total.	
230	Operating.	Horse, Wagon and Cartage.....	\$ 62 76	\$ 407 69	\$ 470 45	\$ 3,422 78
233		Inlet Pipe No. 1.....	2 09		2 09	111 80
239		Light—Lamps, Oil, Wicks, &c..	36	12 75	13 11	32 96
245		Mains and Branches.....	950 63	38 89	989 52	16,559 38
258		Main, 30-inch.....	600 82	268 41	869 23	899 33
261		Meters.....	89 33	181 14	270 47	3,828 83
275		Office Furniture and Fixtures...	47	16 42	16 89	22 28
277		Oil and Tallow.....				2 24
279		Paving and Street Repairs.....	†			449 94
285		Railroad Switch and Scales.....	109 29	35 07	144 36	375 68
288		Reservoir.....	2,505 51	392 05	2,897 56	22,315 45
315		Stand Pipe.....	† 02	75	77	77
319		Stop Valves.....	207 71	146 10	353 81	3,755 13
323		Superintendent's Stores.....				396 52
325		Superintendent's Expenses....	38	13 41	13 79	52 56
327		Shop Rent.....	2 93	102 71	105 64	305 89
332		Tools and Repairs.....	114 31	148 47	262 78	4,006 11
339		Waste and Packing.....	†			22 18
351		Advtg., Books, Sta. and Prtg...	5 57	194 98	200 55	259 75
353		Buildings and Grounds.....	† 617 14		617 14	1,246 43
357		Engineers and Firemen.....	6,312 27		6,312 27	106,753 42
370		Engineers' Stores.....	09	3 20	3 29	2,348 57
371		Inspectors.....	† 1,978 72		1,978 72	1,978 72
374		Expense.....	121 05	108 00	229 05	358 84
376		Electric Light Plant.....	† 54	18 79	19 33	29 55
380		Fire Hydrants.....	†			20
382		Fuel.....	167 98	5,880 69	6,048 67	145,294 00
410		Insurance.....	4 00	139 95	143 95	990 20
415		Light—Lamps, Oil, Wicks &c..	40	14 13	14 53	222 08
430		Meters.....	† 399 28	3 76	403 04	439 00
436		Oil and Tallow.....	14 56	509 66	524 22	9,744 41
445		Reservoir.....	† 432 87	12 93	445 80	885 80
449		Rent of Office..	† 06	2 11	2 17	357 07
458		Tools and Repairs.....	2 22	77 88	80 10	135 80
463		Taxes—State, County and School				1,100 83
465		Telephone and Telegraph.....	4 56	159 68	164 24	349 97
470		Waste and Packing.....	10 82	378 87	389 69	4,877 43
475	Accounting.	Water Rents Returned.....	3 94	138 06	142 00	217 23
502		Advtg., Books, Sta. and Prtg...	9 15	320 22	329 37	8,068 69
518		Expense.....	89	81 29	32 18	14,782 07
522	Sundries.	Horse, Wagon and Cartage.....	†			17 30
531		Postage.....	8 00	280 32	288 32	4,833 91
551		Salaries.....	6,376 58		6,376 58	154,699 58
626	Legal.	City of Erie Sinking Fund Com.				105,500 00
628		City of Erie.....				6 41
703		Court Costs.....	37 20		37 20	478 40
708		Counsel Fees....	100 00		100 00	2,790 38
713		Expense.....				35 25
		Totals.....	\$ 46,774 48	\$ 46,085 72	\$ 92,860 20	\$1,903,277 70

*These accounts not kept previous to 1891.

†These accounts not kept previous to 1892.

‡These accounts not kept previous to 1893.

RECAPITULATION.

Department.	For the Year 1893.				From be- ginning of Works to Dec. 31st, 1893.
	Pro Rata.	Labor.	Material.	Total.	
Construction.....	..6084258918	\$ 22,021 07	\$ 34,477 48	\$ 56,498 55	\$1,237,030 47
Maintenance.....	..1236238991	8,146 02	3,333 72	11,479 74	98,075 94
Operating.....	..1908057488	10,075 57	7,642 69	17,718 26	277,019 30
Accounting.....	..0756009708	6,894 62	631 83	7,026 45	182,341 56
Sundries.....	.....	.....	.....	.....	106,566 41
Legal.....	..0014774898	187 20	.....	187 20	3,204 03
Totals.....	..9999999999	\$ 46,774 48	\$ 46,085 72	\$ 92,860 20	\$1,903,277 70

1893. Statement of Accounts with City of Erie Pa. 1893.

CITY OF ERIE, PA.		Dr.
WATER—Fire Hydrants.....	\$ 43,000 00	
Park Fountains.....	1,251 05	
Engine Houses.....	18 25	
City Hall.....	155 00	
Flushing Sewers.....	55 00	
		\$ 44,500 30
INTEREST—From Second National Bank, Balances, April 1, 1893, to October 1, 1893.....		117 15
PROMISS—Accounts.....		15 00
Balance.....		\$ 44,632 45
		\$ 7,778 65
CREDIT.		
BALANCE—December 31, 1892.....		\$ 6,250 00
INTEREST—On same to December 31, 1893.....		117 15
RENT—Of Offices.....		1,251 05
		\$ 7,618 20
Balance.....		\$ 1,159 45

DISBURSEMENTS —Continued.

Ledger Folio.	Department.	Account.	For the Year 1893.			From be- ginning of Works to Dec. 31st, 1893.
			Labor.	Material	Total.	
230		Horse, Wagon and Cartage.....	\$ 62 76	\$ 407 69	\$ 470 45	\$ 3,422 78
233		Inlet Pipe No. 1.....	2 09	.....	2 09	111 80
239		Light—Lamps, Oil, Wicks, &c..	36	12 76	18 11	32 96
245		Mains and Branches.....	950 63	38 89	989 52	16,559 38
258		Main, 30-inch.....	600 82	268 41	869 23	899 33
261		Meters.....	89 33	181 14	270 47	3,828 83
275		Office Furniture and Fixtures...	47	16 42	16 89	22 28
277		Oil and Tallow.....	.....	.....	.....	2 24
279		Paving and Street Repairs.....	†.....	.....	.....	449 94
285		Railroad Switch and Scales.....	109 29	35 07	144 36	375 68
288		Reservoir.....	2,605 51	392 05	2,897 56	22,315 45
315		Stand Pipe.....	† 02	75	77	77
319		Stop Valves.....	207 71	146 10	353 81	3,755 13
323		Superintendent's Stores.....	.....	.....	.....	396 52
325		Superintendent's Expenses....	38	13 41	13 79	52 56
327		Shop Rent.....	2 93	102 71	105 64	305 89
332		Tools and Repairs.....	114 31	148 47	262 78	4,006 11
339		Waste and Packing.....	†.....	.....	.....	22 18
351	Operating.	Advtg., Books, Sta. and Prtg...	5 57	194 98	200 55	259 75
353		Buildings and Grounds.....	† 617 14	.....	617 14	1,246 43
367		Engineers and Firemen.....	6,312 27	.....	6,312 27	106,753 42
370		Engineers' Stores.....	09	3 20	3 29	2,348 57
371		Inspectors.....	† 1,978 72	.....	1,978 72	1,978 72
374		Expense.....	121 65	108 00	229 05	358 84
376		Electric Light Plant.....	† 54	18 79	19 38	29 55
380		Fire Hydrants.....	†.....	.....	.....	20
382		Fuel.....	167 98	5,880 69	6,048 67	145,294 00
410		Insurance.....	4 60	139 95	143 95	990 20
415		Light—Lamps, Oil, Wicks &c...	40	14 13	14 53	222 08
430		Meters.....	† 399 28	3 76	403 04	439 00
436		Oil and Tallow.....	14 56	509 66	524 22	9,744 41
445		Reservoir.....	† 432 87	12 93	445 80	885 80
449		Rent of Office.....	† 06	2 11	2 17	357 07
458		Tools and Repairs.....	2 22	77 88	80 10	135 80
463		Taxes—State, County and School	.....	.....	.....	1,106 83
465		Telephone and Telegraph.....	4 56	159 68	164 24	349 97
470		Waste and Packing.....	10 82	378 87	389 69	4,877 48
475		Water Rents Returned.....	3 94	138 06	142 00	217 23
502	Accounting.	Advtg., Books, Sta. and Prtg...	9 15	320 22	329 37	8,068 69
518		Expense.....	89	81 29	32 18	14,722 07
522		Horse, Wagon and Cartage.....	†.....	.....	.....	17 30
531		Postage.....	8 00	280 32	288 32	4,833 91
551		Salaries.....	6,376 58	.....	6,376 58	154,699 58
626	Sundries.	City of Erie Sinking Fund Com.	.....	.....	.....	105,500 00
628		City of Erie.....	.....	.....	.....	6 41
703	Legal.	Court Costs.....	37 20	.....	37 20	478 40
708		Counsel Fees.....	100 00	.....	100 00	2,790 38
713		Expense.....	.....	.....	.....	85 25
		Totals.....	\$ 46,774 48	\$ 46,085 72	\$ 92,860 20	\$1,903,277 70

*These accounts not kept previous to 1891.

†These accounts not kept previous to 1892.

‡These accounts not kept previous to 1893.

RECAPITULATION.

Department.	For the Year 1893.				From beginning of Works to Dec. 31st, 1893.
	Pro Rata.	Labor.	Material.	Total.	
Construction.....	..6084258918	\$ 22,021 07	\$ 34,477 48	\$ 56,498 55	\$1,237,030 47
Maintenance.....	..1236238991	8,146 02	3,338 72	11,479 74	98,075 94
Operating.....	..1908057488	10,075 57	7,642 69	17,718 26	277,019 30
Accounting.....	..0756669703	6,394 62	631 83	7,026 45	182,341 55
Sundries.....	.....	.....	.....	.....	105,516 41
Legal.....	..0014774898	187 20	.....	187 20	3,304 03
Totals.....	..9999999998	\$ 46,774 48	\$ 46,085 72	\$ 92,860 20	\$1,903,277 70

1893. Statement of Accounts with City of Erie Pa. 1893.

CITY OF ERIE, PA.		DR.
WATER—Fire Hydrants.....	\$ 43,000 00	
Park Fountains.....	1,251 05	
Engine Houses.....	146 25	
City Hall.....	185 00	
Flushing Sewers.....	55 00	
		\$ 44,637 30
INTEREST—From Second National Bank, Balances, April 1, 1893, to October 1, 1893.....		143 68
PLUMBING—Accounts.....		35 00
Balance.....		\$692,648 83
		\$ 737,464 81
CREDIT.		
BALANCE—December 31, 1892.....		\$694,589 44
INTEREST—On same to December 31, 1893.....		41,675 37
RENT—Of Offices.....		1,200 00
		\$ 737,464 81
Balance.....		\$ 692,648 83

Pumping Engine Statistics for 1893.

The pumps are three in number. Nos. 1 and 2 are known as the Cornish Bull Pumps. The diameter of each plunger is 20½ inches, and each has a stroke of 10 feet. The capacity of each pump is estimated to be 165 gallons to each stroke. Pump No. 3 is a Gaskill Horizontal Compound Pumping Engine, having two H. P. cylinders 21 in. diameter, two L. P. cylinders 42 in. diameter, and two pumps 19½ in. diameter, and all 36 in. stroke, of a guaranteed capacity of 5,000,000 gallons daily at a piston speed of 120 feet per minute against a head of 237 feet. The Stand Pipe is 251 feet high. The Reservoir is nearly two miles from the Pumping Works, the bottom of which is 210 feet above the surface of the Bay, and the Water has been maintained during the year at an average depth in the Reservoir of about 25½ feet.

Months	No. 1.		No. 2.		No. 3.		No. 4.		Totals.		Daily Average.	1893 1894 1895 1896 1897 1898
	Days Run.	Gallons.	Days Run.	Gallons.	Days Run.	Gallons.	Days Run.	Gallons.	Days Run.	Gallons.		
January..	6	9,118,395	17	33,770,550	31	172,126,500	.....	.....	54	215,015,445	6,935,982	237 35
February	5	5,946,435	21	36,691,050	28	146,788,460	.....	.....	54	189,425,945	6,765,212	237.44
March....	.....	.....	31	51,814,950	31	150,797,920	.....	.....	62	202,612,870	6,535,899	237.64
April.....	4	3,768,105	25	33,282,975	29	139,486,620	.....	.....	58	176,537,700	5,884,590	237.32
May	2	1,140,975	24	48,552,075	29	151,269,300	.....	.....	55	200,962,250	6,482,656	235.23
June	9	13,557,555	25	44,468,325	29	148,151,458	.....	.....	63	206,177,338	6,872,577	236 04
July.....	5	6,248,550	31	61,540,050	31	167,727,742	.....	.....	67	235,516,342	7 597,301	236.05
August...	4	8,684 280	27	51,812,475	31	173,082,000	.....	.....	62	233,578,755	7,534,798	237 24
Sept.....	14	23,130,855	25	49,495,050	15	68 703 180	7	44,160 000	61	185,489,085	6,177,636	234 09
October ,	3	43,28,940	9	15,686,550	22	122,519 670	8	51,538,080	42	193,893,240	6,254,620	.....
Nov.....	.....	.....	3	5,007 750	8	46,296 250	15	94 497,984	26	145,801,984	4,860,066	.....
Dec. ....	.....	.....	.....	.....	.....	.....	19	148,627,656	19	148,627,656	4,794,440	.....
Total...	52	75,924,090	238	432,121,800	284	1,486,949,100	49	338,643,720	623	2,333,638,610	6,391,314	236 48

The regular employes at the Pumping Works are one chief engineer, two assistant engineers, three firemen and one watchman. The chief engineer stands a watch of five hours, from 7 to 12 every forenoon; the assistants divide the remainder of each day equally between them; each one of the firemen stands a watch of eight hours. Besides firing, the firemen unload the coal from the cars, except when two pumps are run, in which case they are assisted by the watchman or a laborer. The chief engineer gives ten hours daily to the service of the Commissioners of Water Works in the City of Erie, the hours when he is not on watch being employed in repairs, supervision, etc. In addition to standing their regular watch, the assistant engineers aid their superior officer in keeping the machinery in order. The watchman takes care of the buildings and grounds, besides doing such other work as may be required of him.

NOTE.—For description of No. 4 Engine see page 28.

Amount of Coal Consumed in Pumping, Gallons of Water Pumped, Average Height Pumped, Cost per Million Gallons, &c., from the First Year the Works were Operated to Dec. 31, 1893.

YEAR.	Tons of Coal Consumed.	Price of Coal per Ton from May 1 of each year.	Cost of Coal from January 1 to December 31.	Grades of Bituminous Coal	Gallons of Water Pumped.		Number of Places supplied.	Number of Fire Hydrants	Average height of Water in Reservoir above surface of Bay.	Cost of Coal per million Gallons raised to Reservoir	Gallons raised to Reservoir by use of Coal.
						Increase or Decrease.					
1868.....	59 1 5	5 05	\$ 309 61	Lump.	.....	.....	.....	.....	.....	.....	.....
1869.....	544 4	5 05	4,818 48	"	246,648,960	.....	1,218	97	232 0	.....	.....
1870.....	1,064 5	5 05	5,159 10	"	279,368,495	32,719,535 i	1,727	99	232 0	\$18 76	98 5
1871.....	1,422 7	5 05	7,117 00	"	395,076,000	115,707,505 i	2,140	103	232 0	16 52	150 9
1872.....	1,308 5	5 05	6,528 50	"	384,062,415	11,013,585 d	2,475	107	232 0	21 90	114 8
1873.....	1,672 5	5 05	8,412 65	"	444,817,395	60,754,980 i	2,663	107	232 0	17 33	126 4
1874.....	1,759 0	4 85	7,709 54	"	531,005,475	86,188,080 i	2,700	110	232 0	16 30	145 5
1875.....	1,836 4	4 85	8,657 61	"	670,726,650	139,721,175 i	2,763	112	232 0	13 30	159 3
1876.....	1,105 1	4 00	8,925 22	"	660,981,810	9,744,840 d	2,854	114	232 0	12 75	135 7
1877.....	2,456 6	3 70	8,509 33	"	682,392,315	21,410,505 i	2,915	115	232 0	11 64	136 4
1878.....	2,463 3	3 35	7,945 37	"	807,800,400	125,408,085 i	3,011	121	232 0	9 19	153 6
1879.....	2,628 1	3 09	7,428 92	"	775,805,250	31,995,150 d	3,568	126	232 0	8 99	126 0
1880.....	3,076 1	1 99	6,978 41	Slack.	975,640,934	219,835,684 i	4,110	161	232 0	6 68	142 2
1881.....	3,430 3	1 90	6,517 58	"	829,759,260	145,881,674 d	4,687	171	234 0	6 45	139 7
1882.....	2,968 2	1 75	5,355 93	"	815,939,685	13,819,575 d	5,077	197	234 7	4 66	170 0
1883.....	2,398 2	1 55	3,908 59	"	917,781,350	101,841,665 i	5,395	248	234 3	4 99	152 4
1884.....	3,010 8	1 45	4,502 61	"	1,036,496,665	118,715,315 i	5,658	270	232 9	4 40	159 7
1885.....	3,243 8	1 30	4,575 79	"	1,117,389,075	80,892,410 i	6,140	280	233 3	3 86	165 8
1886.....	3,369 0	1 25	4,318 64	"	1,218,213,688	100,824,613 i	6,368	318	234 1	2 95	216 0
1887.....	2,820 4	1 15	3,589 31	"	1,341,708,002	123,494,314 i	6,600	333	234 6	1 89	292 1
1888.....	2,392 3	1 09	2,545 46	"	1,475,358,220	133,650,218 i	7,086	346	235 2	1 80	301 5
1889.....	2,446 0	1 08	2,661 12	"	1,659,625,551	184,267,331 i	7,728	372	236 9	1 81	322 4
1890.....	2,583 6	1 20	3,052 89	"	1,807,038,580	147,413,029 i	8,255	393	237 3	2 18	291 42
1891.....	3,120 7	1 29	3,941 53	"	2,047,993,505	240,954,925 i	8,998	415	237 4	2 35	279 43
1892.....	3,658 0	1 32 1/2	4,807 11	"	2,333,638,610	285,645,105 i	9,687	444	236 5	2 66	248 6
1893.....	4,603 5	1 32 1/2	6,218 95	"							

Table Showing the Water Rates Per 1,000 Gallons in 121 Cities Where Meters Are Used.

W. Rank.	Rates.		Municipality.	U. S. Census, 1890.		Owners	No. Meters Used.	System.
	Min.	Max.		Rank.	Population.			
1	Special.	20	Beverly, Mass.....	816	10,821	C	50	P
2	"	20	Lynn, Mass.....	51	55,727	C	494	P
3	"	20	Salem, Mass.....	99	30,80	C	139	P
4	"	25	Worcester, Mass.....	32	84,655	C	9,022	G
5	"	50	Wilmington, Del.....	44	61,481	C	175	P
6	2½	8	Harrisburg, Penn'a.....	75	39,385	C	1,179	P
7	2½	.....	New Bedford, Mass.....	72	40,733	C	144	B
8	2½	6	Buffalo, N. Y.....	11	255,664	C	150	P
9	3	.....	Washington, D. C.....	14	230,392	U S	154	B
10	3	10	Newburgh, N. Y.....	183	23,087	C	3	B
11	3½	6½	Detroit, Mich.....	15	205,876	C	2,053	P
12	3½	10	Toledo, Ohio.....	38	81,434	C	750	P
13	4	30	Bridgeport, Conn.....	59	48,866	P	50	B
14	4	30	McKeesport, Penn'a.....	161	20,741	C	350	P
15	4½	30	Altoona, Penn'a.....	101	30,337	C	25	G
16	4½	20	Grand Rapids, Mich.....	47	60,278	C	496	P
17	4½	20	Milwaukee, Wis.....	16	204,468	C	9,008	P
18	5	.....	Lancaster, Penn'a.....	94	32,011	C	7	P
19	5	7½	Wilkesbarre, Penn'a.....	80	37,718	P	8	G
20	5	10	Bay City, Mich.....	109	27,839	C	395	P
21	5	10	Troy, N. Y.....	46	60,956	C	237	B
22	5	15	Holyoke, Mass.....	85	35,637	C	177	G
23	5	15	New Albany, Ind.....	155	21,059	P	62	P
24	5	25	Indianapolis, Ind.....	27	105,436	P	450	P
25	5	30	Waterbury, Conn.....	107	28,646	C	188	B
26	5	30	Williamsport, Penn'a.....	115	27,132	P	16	.....
27	5	35	Fitchburg, Mass.....	144	22,037	C	1,267	G
28	5½	.....	Cleveland, O.....	10	261,353	C	1,776	P
29	5½	26½	Yonkers, N. Y.....	93	82,038	C	3,200	P
30	6	.....	Baltimore, Md.....	7	434,439	C	1,018	P
31	6	.....	Columbus, O.....	30	58,150	C	700	P
32	6	.....	Erie, Pa.....	73	40,684	C	142	P
33	6	10	Dayton, Ohio.....	45	61,220	C	150	P
34	6	11	Saginaw, Mich.....	62	46,322	C	225	P
35	6	15	Louisville, Ky.....	20	161,129	P	792	P
36	6	25	Binghamton, N. Y.....	88	85,005	C	395	P
37	6	25	Syracuse, N. Y.....	81	88,143	C	600	B
38	6	30	Pawtucket, R. I.....	110	27,633	C	4,081	P
39	6	50	Peoria, Ill.....	71	41,024	P	1,250	P
40	6	1.00	San Diego, Cal., owned by Co, city lessee	205	16,159	C	1,300	B
41	6½	10	Fort Wayne, Ind.....	86	35,393	C	320	P
42	6½	16	Jacksonville, Florida.....	195	17,201	C	481	P
43	6½	30	Birmingham, Ala.....	119	26,178	P	500	P
44	7	30	Springfield, Mass.....	65	44,179	C	1,422	G
45	7½	25	New Orleans, La.....	12	242,039	P	no rep't	P
46	7½	30	Hartford, Conn.....	54	53,280	C	"	G
47	7½	30	Utica, N. Y.....	67	44,007	P	2,700	G
48	8	.....	Albany, N. Y.....	29	94,923	C	60	B
49	8	.....	Philadelphia, Pa.....	8	1,046,964	C	788	P
50	8	10	Chicago, Ill.....	2	1,099,850	C	4,326	P
51	8	10	Joliet, Ill.....	132	23,264	C	41	P
52	8	12	Trenton, N. J.....	50	57,458	C	125	P
53	8	16	Akron, Ohio.....	111	27,601	P	125	B
54	8	16	Reading, Penn'a.....	48	58,661	C	11	G
55	8	20	Covington, Ky.....	82	37,371	C	486	P
56	8	20	Lawrence, Mass.....	64	44,654	C	2,001	P
57	8	20	Youngstown, Ohio.....	91	33,220	C	200	P
58	8	25	Scranton, Penn'a—two companies.....	39	75,215	P	28	G
59	8	30	Galveston, Texas.....	106	29,084	C	5	P
60	8	30	Terre Haute, Ind.....	103	30,217	P	85	P
61	8	40	Chattanooga, Tenn.....	105	29,100	P	1,050	P
62	8	50	Memphis, Tenn.....	43	64,495	P	300	P
63	8.97+	15	Cincinnati, Ohio.....	9	296,908	C	1,650	P
64	9	25	Kansas City, Mo.....	24	132,716	P	2,700	B
65	9	30	New Haven, Conn.....	35	81,298	P	100	B
66	10	.....	Augusta, Georgia.....	90	33,300	C	5	P
67	10	.....	Brooklyn, N. Y.....	4	806,843	C	2,232	P
68	10	14	Rochester, N. Y.....	22	133,896	C	3,800	B
69	10	20	Cambridge, Mass.....	41	70,028	C	287	B
70	10	20	Jersey City, N. J.....	19	163,003	C	400	B

Table Showing the Water Rates Per 1,000 Gallons in 121 Cities Where Meters Are Used.—Continued.

W. Rank	Rates.		Municipality.	U. S. Census, 1890.		Owners	No. Meters Used.	System.
	Min.	Max.		Rank.	Population.			
1	10	90	Paterson, N. J.	36	78,347	P	80	P
2	10	20	Pittsburgh, Penn'a.....	13	288,617	C	50	P
3	10	90	St. Paul, Minn.....	23	133,156	C	656	B
4	10	25	Seattle, Wash.....	70	42,887	C	150	P
5	10	28	Fall River, Mass.....	40	74,396	C	3,975	P
6	10	30	St. Louis, Mo.....	5	451,770	C	3,600	P
7	10	25	Mobile, Alabama.....	97	31,076	P	no rep't	P
8	10	40	Springfield, Ohio.....	95	31,895	C	50	P
9	10	50	Elmira, N. Y.....	104	29,708	P	325	B
10	10 1/2	18 1/2	Boston, Mass.....	6	448,477	C	4,245	B
11	10 1/2	18 1/2	Chelsea, Mass.....	108	27,909	C	no rep't	P
12	10 1/2	18 1/2	Somerville, Mass.....	74	40,152	C	51	P
13	11	25	Sioux City, Iowa.....	78	37,806	C	160	P
14	12	35	Newton, Mass.....	129	24,379	C	3,600	P
15	12 1/2	25	Montgomery, Ala.....	146	21,883	P	685	P
16	12 1/2	50	Topeka, Kansas.....	98	31,007	P	95	P
17	12 1/2	3.00	Little Rock, Arkansas.....	120	25,874	P	31	P
18	13	25	Tacoma Wash.....	84	36,000	C	234	B
19	13	35	Lincoln, Neb.....	52	55,154	C	90	P
20	13 1/2	.....	New York, N. Y.....	1	1,515,301	C	27,041	B
21	14.4	45	Quincy, Ill.....	96	31,494	P	519	P
22	14 1/2	18 1/2	Lowell, Mass.....	37	77,696	C	2,300	G
23	15	.....	Newark, N. J.....	17	181,830	C	556	P
24	15	.....	Savannah, Ga.....	69	43,189	C	3	P
25	15	20	Providence, R. I.....	25	132,146	C	10,908	P
26	15	25	Allentown Penn'a.....	123	25,228	C	1	P
27	15	25	Lexington, Ky.....	152	21,567	P	800	P
28	15	30	Macon, Ga.....	137	22,746	P	213	P
29	15	35	Council Bluffs, Iowa.....	153	21,474	P	210	B
30	15	40	La Crosse, Wis.....	124	25,090	C	3	P
31	15 1/2	28 1/2	Hoboken, N. J.....	68	43,648	P	5,580	P
32	20	.....	Manchester, N. H.....	66	44,126	C	1,608	P
33	20	30	Brocton, Mass.....	114	27,294	C	2,000	P
34	20	33 1/2	Portland, Me.....	83	36,425	P	329	G
35	20	40	Muskegon, Mich.....	138	22,702	C	no rep't	P
36	20	40	Norfolk, Va.....	89	34,871	C	120	P
37	20	45	Fort Worth, Texas.....	184	23,076	C	44	P
38	20	50	Butte City, Mont.....	322	10,723	P	150	B
39	20	50	Dubuque, Iowa.....	102	30,311	P	no rep't	B
40	20	50	Leavenworth, Kas.....	169	19,768	P	350	B
41	20.4	40	Davenport, Iowa.....	116	26,872	P	310	B
42	21 1/2	40	San Francisco, Cal....	8	298,992	P	15,500	B
43	22 1/2	45 1/2	Sacramento, Cal.....	117	26,386	C	no rep't	P
44	24	25 1/2	Malden, Mass.....	185	23,031	C	67	B
45	25	.....	Salt Lake City, Utah.....	63	44,843	C	no rep't	G
46	25	50	San Antonio, Texas.....	81	37,673	P	40	P
47	25	60	Charleston, S. C.....	53	54,955	P	20	P
48	26 1/2	38 1/2	Los Angeles, Cal.....	57	50,395	P	260	G
49	30	50	Gloucester, Mass.....	127	24,651	C	40	P
50	30	55	Oakland, Cal.....	60	48,682	P	160	B
51	50	.....	Dallas, Texas.....	77	38,067	C	14	P

C—City. P—Corporation or Company.
G—Gravity. P—Pumping. B—Both.

Main Pipes Laid in 1893.

LOCATION.	1½ IN.	2 INCH.	4 INCH.	6 INCH.	12 INCH	
Front, bet Peach and Sassafras..			464 4			
2d, bet Poplar and Liberty.....			341			
3d, East and West.....			356			
5th, bet Liberty and Plum.....				242 9		249 5 ft ¾ in rem.
6th, bet Plum and Cranberry.....	357	†	13 7	1,421 8		† Hd't branc's
7th, bet Myrtle and Cherry.....		†	14 9			" "
8th, cor Cranberry.....	† 8 8					1½ " "
9th, east from East ave.....	250 3	†	8 5			H. B.
10th, East and West.....			44	427 2		
11th, East and West.....				699		
12th, bet Cherry and Poplar.....					722	Replac'g 6 in
14th, East and West.....				453 6		
15th, bet Ash and Reed.....				361		
16th, West.....				215		
17th, West.....		†	23 8			H. B.
19th, West.....				1,255		
21st, East and West.....				394		
22nd, East.....				512 9		
23d, East.....		†	8 6	732 11		
24th, East.....		†	17	634 6		H. B.
26th, West.....			1,559		101	908 ft 1 in, 101 ft
26th, West.....		†	8 4			4 in removed.
27th, East.....		†	9 6			H. B.
Ross, bet 4th and 5th.....				51		H. B.
Ash, bet 12th-13th. 20th-21st.....			318	408		
German, bet 6th-7th. 17th-18th...				459 9		
French, bet 21st and 22nd.....				127		
State, bet 21st-23d, 12th-14th....				939		420 ft 4 in rem'd
Myrtle.. ..				710 4		
Poplar, bet 11th-12th. 12th-13th..		†	8	685 2		H. B.
Liberty, bet 19th-20th, 26th-27th..		†	8 6	483		H. B.
Plum.....			176	1,023		
Plum, bet 6th and 7th.....		†	10 6			H. B.
Cascade, bet 9th-11. 3d-4th.....				431		
Cranberry, bet 12th and 13th.....		†	8 9	133		H. B.
Hazel, bet 26th and 30th		†	8	812		H. B.
Hess ave, cor 10th.....		†	8 3			H. B.
Cochran, bet 26th and 29th.....				331		
Payne ave and 10th.....	15			139		
McCarter ave.....				48		
Elliot ave.....		†	5 4	516		H. B.
Cottage ave.....			300			
Total.....	8 8	622 3	3,719 5	14,645 6	823	30 in.
Front and Ches't at Pumping Sta						51 9

Main Pipes Laid in 1893.

SUMMARY.

1½ inch.....	88	feet
2 "	6223	"
4 "	3,7195	"
6 "	14,6456	"
12 "	823	"
30 "	519	"
Total feet, 19,8707		

LESS MAIN PIPE REMOVED.

½ inch.....	2495	
1 "	908	
4 "	521	
6 "	722	2,4006

Total feet, 17,4701
Or 3 miles, 1,6301 feet

Amount laid to January 1, 1893.....	81 miles, 4,4387 feet
Total, December 31, 1893.....	85 miles, 1,788½ feet

Connections Made, 1893.

SUMMARY.

½ inch.....	total	556	
1 "	"	10	
1½ "	"	2	
1½ "	"	5	
2 "	"	6	
4 "	"	9	
6 "	"	1	589

LESS REMOVED.

½ inch.....	total	11	
1 "	"	1	
2 "	"	2	
3 "	"	1	15

Total increase.....	574	11,226 1 feet
	Or 2 miles,	666 1 feet
Connections to January 1, 1893.....	31 "	976 1 "
Total, December 31, 1893.....	33 miles,	1,642 3/4 feet

In addition 122 service connections were renewed, mostly in streets to be paved, as follows:

Parade street	2
State "	38
Seventh "	54
Fourth "	6
Tenth "	19
Sixth "	1
Holland "	2
Total.....	122

Stop Valves, 1893.

SUMMARY.

SIZE.	No.			
1½	1	(Less Removed )	.....	1
2	1		.....	1
4	9	1	.....	8
6	33	1	.....	32
12	1		.....	1
4"	2		.....	2
				45
1.3 in.			.....	1
Net increase.....				44

Tees Placed in 1893.

4x4.....	12
6x3	1
6x4	31
12x6.....	2
Total increase	46

Crosses Placed in 1893.

4x4	2	Removed 2	.....	0
6x4	2	" 1	.....	1
6x6			.....	13
12x6			.....	2
Net increase.....				16



Fire Hydrants, 1893.

STREET.	LOCATION.	NAME.
Front.....	Between Peach and Sassafras.....	Matthews
Fifth.....	N W corner Chestnut [in place of West Jersey].	"
Sixth.....	N E " Cascade.....	"
"	N E " Raspberry.....	"
Ninth.....	Between French and Holland.....	"
Tenth.....	" " " "	"
"	S E corner German [in place of West Jersey]	"
"	N W " Holland [in place of West Jersey].	"
Twelfth.....	N E " Poplar.....	"
Thirteenth.....	N W " Ash [in place of Pittsburg].....	"
Eighteenth.....	N W " Liberty [in place of old one].....	"
Twenty-third.....	N E " State.....	"
Twenty-fourth.....	N W " Parade.....	"
"	N W " German.....	"
Twenty-sixth.....	N E " Cranberry.....	"
Twenty-seventh.....	Between Pennsylvania and Brandes.....	Bay State
Eliot.....	N E corner Peach.....	" "
Hess ave.....	N E " Tenth.....	Matthews
French.....	N E " Fourteenth [in place of old one]...	"
Peach.....	N E " Third [in place of Bay State]....	"
Poplar.....	Between Twelfth and Thirteenth.....	Bay State
Liberty.....	S E corner Nineteenth.....	Matthews
Plum.....	Between Sixth and Seventh.....	"
Cranberry.....	S E corner Twelfth.....	"
Hazel.....	365 feet south of Twenty-ninth.....	Bay State
Eighth.....	Corner Cranberry, 1½.....	Jarecki

Fire Hydrants Placed, 1893.

SUMMARY.

Matthews.....	21	
Bay State.....	4	
Jarecki, 1½ in.....	1	
	—	26
HYDRANTS REMOVED.		
West Jersey.....	3	
Old Style Matthews.....	2	
Pittsburg.....	1	
Bay State.....	1	7
	—	19
1½ in Cart Sprinkler Hydrant.....		1
		—
		18 18
PRIVATE HYDRANTS		
The W. L. Scott Co.....	6	
Erie Malleable Iron Works.....	3	
Erie Pail Factory.....	1	
Hollands Manufacturing Co.....	1	11
	—	—
Total for 1893.....		29
Number in use Dec. 31, 1892.....		415
		—
Total in use December 31, 1893.....		444

**Report Upon the "Worthington" 12,000,000 Gallon High
Duty Pumping Engine, Tested November 29-30,
December 1-2, 1898.**

ERIE, Pa., Dec. 12, 1898.

Board of Water Commissioners, Erie, Pa.:

GENTLEMEN—Acting under your instructions we conducted the tests of the new 12,000,000-gallon High Duty Worthington Pumping Engine at the Pumping Station, upon November 29th and 30th and December 1st and 2nd, and now submit below our report upon the same, together with the boilers used.

The conditions of the contract were that the pump should be capable of pumping at the rate of 12,000,000 gallons of water per 24 hours into the 30-inch main leading to the reservoir, with ease and safety, and that the economic duty of the engine should be at 12,000,000 gallons duty 110,000,000 foot pounds per 100 pounds of coal, the evaporative capacity of which was assumed to be 10 pounds of dry steam per pound of coal, at the 9,000,000 rate of daily capacity 100,000,000 foot pounds, at 8,000,000 gallons daily capacity 90,000,000 foot pounds, and at 7,000,000 gallons daily capacity 80,000,000 foot pounds, the steam to be computed as evaporated from the temperature of the suction (or injection water), the engine therefore receiving credit for the salvage of heat returned to the boilers in the feed water.

The description of the pumping engine is as follows: The pumping engine is of the Worthington Compound High Duty type, having two high pressure and two low pressure horizontal steam cylinders and two double acting water plungers. The cylinders of the engine are jacketed on sides and ends with steam at boiler pressure, and are covered with asbestos, cement and hair felt, and enclosed with black walnut lagging.

All steam passes through a Worthington separator, placed directly above the main throttle valve. Reheaters, containing tubes in which steam at boiler pressure circulates, are placed between the high and low-pressure cylinders.

The steam valves are of the semi-rotative cylindrical type, and are opened and closed by positive connections to the piston rods in such a manner that if the plunger rod should break, the engine would immediately come to a dead stop, as the valves would cease to move. The admission valves of each side are controlled by the opposite side of the engine, while the cut-off valves are worked by their own side. The valve stems are kept tight by the double precaution of a ground disc joint and a taper bearing, instead of passing through stuffing boxes.

The steam pistons are all of the box form and are fitted with sectional steam packing-rings. The air pumps are horizontal and are double acting. They are two in number and lie directly beneath the high-pressure cylinders, being worked by vertical beams which are coupled to cross-heads on the main piston rods. The air pump cylinders are lower than the valve chambers and are consequently always flooded with water.

The main pump valves are of hard rubber, small in diameter and of low lift. They bear on composition seats screwed into the valve plates and are closed by composition helical springs bearing upon circular brass discs, and are held in place by composition guards.

The compensating cylinders, which form the part of the high duty attachment which enables this engine to use steam expansively, are carried upon the cast iron frames which connect the steam cylinders to the water cylinders, and are fitted with chilled cast iron plungers packed with metallic packing. The feed water is supplied to the boilers by an independent steam pump, and the water trapped in the separator and that condensed in the jackets drains into a receiver, whence it is

returned to the boilers under pressure by a small independent steam pump controlled by a float.

The main suction well of large capacity communicates with the bay by a 60-inch main controlled by gates, and is thus accessible for repairs or cleansing. Screens are so arranged as to detain grosser matter liable to enter the pump.

The water is discharged by the engine through a 30-inch force main which first descends to the cellar where it contains a check valve and stop valve, and then passes horizontally out of the building where it rises to the regulation level at the top of the hill, in company with the parallel 20-inch main from the old pumps and the stand pipe. Numerous attachments are made to this 20-inch main, giving the pump the benefit of this added discharge during the test and daily use.

The boilers in use were of the ordinary horizontal tubular type, of the dimensions noted in table No. 2. The fuel supplied was that in usual daily use at the Pumping Station, fired in the manner usually done.

As the boilers were not specially prepared for a test, their performance forming no part of the pumping engine contract, the results obtained are but a fair indication of the daily ordinary practice at the Station.

TABLE NO. 1.
Principal Dimensions of Engine.

Number of high pressure cylinders.....	2
Number of low pressure cylinders.....	2
Number of water cylinders.....	2
Diameter of high pressure cylinders.....	33 inches
Diameter of low pressure cylinders.....	66 inches
Diameter of water plungers.....	29 inches
Length of stroke, all cylinders, maximum.....	49¾ inches
Diameter of high pressure piston rods.....	5½ inches
Diameter of two low pressure piston rods.....	4 inches
Diameter of piston rod of water cylinders.....	6½ inches
Clearance high pressure cylinders, minimum.....	1½ per ct.
Clearance low pressure cylinders, minimum.....	1 per ct.
Diameter steam pipe.....	6 inches
Length steam pipe, boilers to engine.....	132 feet
Volume of pump cylinders corresponding to one count of counter at full stroke of 49¾ inches.....	555.728 gallons
Diameter of force main at engine house.....	30 inches
Diameter of force main in street, one each.....	30 and 20 inches
Elevation of reservoir above engine room floor, about.....	199 feet
Floor above mean water line of well.....	11 feet

During the 24-hour test three boilers were in use: Two 72-inch by 18 feet, and one 60-inch by 14 feet, the principal dimensions of which are as follows:

TABLE NO 2.

Kind of boiler.....	Hor. Tubular	Hor. Tubular
Number used.....	2	1
Age.....	2½ years	13 years
Horse power, usual rating.....	300	70
Condition.....	fair	fair
Condition of connections.....	leaky	very leaky
Diameter.....	72 inches	60 inches
Length.....	18 feet	14 feet
Number of 4-inch tubes.....	168	54
Area of H. S. shell.....	428	140
Area of H. S. tube.....	3166	759
Area of grates.....	60 sq feet	20 sq. fee
Area through tubes.....	12.82 sq. feet	4.12 sq. fee
Distance grate to shell....	28 inches	20 inches
Distance bridge to shell.....	10 inches	10 inches
Ratio H. S. to grates.....	59.9 to 1	44.9 to 1
Ratio, grates to tube area.....	4.68 to 1	4.85 to 1

The 60-inch boiler was in use during the 12 000,000 gallon test only for the lesse duties. Steam was supplied from the 72-inch boilers only.

176105

The method followed in conducting the test was as nearly as possible that prescribed by the American Society of Mechanical Engineers, except that the duty is expressed as per terms of contract instead of per 1,000,000 heat units. In determining the amount of duty performed, the principal data required are the weight of water supplied to the boilers by the main feed pump and the jacket pump, its temperatures, the quantity of moisture in the steam supplied to the engine, its pressure, the pressures in the force and suction main close to the engine, the total volume of the plunger displacements.

The water from the feed pump to the boiler passed through a standard Worthington meter and the readings of this meter were made the basis of the test. This meter was carefully tested three times during the progress of the test by weighing out four cubic feet as read by the meter and comparing the ascertained weight with the standard tabulated weight for the temperature noted. The leakage of the meter was found to be 28-100 of 1 per cent, and the engine was charged with this in correcting the total readings, and was credited with the twelve cubic feet used in testing. The temperature of the feed was logged among the regular readings. With regard to the jacket pump the tank receiving the water was measured between given points upon its water gauge and the pump being stopped the tank was allowed to fill between the given points and the time noted required to fill the same. During these measurements the water was permitted to pass through the main feed pump and correction made at the ascertained rate in total reading.

In all nineteen observations were made to obtain the rate of jacket condensation, and the mean rate is believed to be correct. The temperature of the water was taken as five degrees less than the temperature of steam at the pressure noted. The quantities and temperatures thus obtained were corroborated by the agreement of the calculated and actual temperatures of the feed water (total) leaving the engines. The quantity of moisture in the steam was carefully tested for, by the barrel calorimeter, located within four feet of the main throttle valve, with standardized scales, and thermometers reading to fifths of a degree. The readings of the steam and water pressures were, with the temperatures and water level, taken every thirty minutes. The gauges were under constant observation and the readings represent fairly the mean of the interval. This applies to the observations of the lengths of strokes which varied very slightly during each test. The gauges, both steam and water, were tested by comparison with standard test gauges, and the errors observed were corrected in the totals. Before the test the valves and plunger were examined under pressure, the pump cylinders being drained and the hand holes removed. Both were found exceptionally tight. No gauge was upon the suction main. The pressure due to its column was computed from the barometric pressure and its mean height.

A set of indicator diagrams hereto attached were taken as noted upon them during the trial. Many were taken at intervals, but as the steam and load were practically constant, the differences are scarcely perceptible, and those submitted may serve as the average of those taken upon the tour noted. During the tests all water connections and steam pipe connections to other boilers were tightly closed, and all observed leakages of steam or water carefully estimated and recorded.

These tests were carefully conducted by H. R. Barnhurst and Fred A. Roth, on the part of the Board of Water Commissioners, assisted by Passed Assistant Engineer Gustav Kaemmerling, U. S. N., who, being temporarily in the city, kindly volunteered, and Harry G. Barnhurst, in the presence of Messrs. E. H. Foster and E. L. Maltby, representing the Worthington Company, assisted by Mr. Kirkbride, who erected the engine.

The engine worked smoothly throughout the entire test. No heating of the oscillating trunnions occurred under the heaviest duty, and no accident of any kind occurred at any time, either during the test or the preparation for it.

TABLE NO. 3 Duty Trial of Engine.

Date of test, 1903.	Nov. 29-30.	Dec. 1.	Dec. 2.	Dec. 3.	Dec. 4.
DIMENSIONS.					
Net area of plunger, square inches.....	660.519	660.519	660.519	660.519	660.519
Average length of stroke, inches.....	48.85	49.46	49.375	49.375	49.375
Gallons, one displacement.....	136.173	137.873	137.036	138.136	138.136
Gallons, one count of counter.....	544.092	551.494	551.494	550.546	551.494
TEMPERATURES.					
Water in return well (surface)	35°	35°	34.5°	34°	34°
" by main feed pump.....	129.5°	133.5°	140.5°	138.5°	138.5°
WATER.	315°	317.3°	316.8°	317.28°	317.28°
pump, pounds.....	314.972	50.379	50.379	33.940	29.559
mp.....	20.769	6.836	6.836	4.334	3.866
temperature of suction.....	213.915	51.334	51.334	34.102	29.810
Frattainment per calorimeter, per cent.....	4542	739	739	540	540
Net dry steam consumed by engine under contract conditions.....	3%	3.410	3.410	3	2
AVERAGE GAUGE PRESSURES.	202.045	48.875	48.875	32.613	28.665
Steam at boilers, pounds.....	78.72	79.82	79.82	80.33	80.33
Steam at engines, pounds.....	75.48	78.42	78.42	77.72	78.34
Well gauge, inches.....	27.74	27.85	27.85	27.63	27.98
Well gauge, feet.....	29.7	96.25	96.25	95.	95.
Distances, feet.....	48.4"	40.88"	40.88"	40.4"	42.61"
Total.....	4.04	3.40	3.40	3.36	3.53
Revolutions by counter.....	17.16	17.16	17.16	17.16	17.16
Total single strokes.....	107.17	105.15	105.15	104.88	103.96
Average piston speed per minute.....	22.974	5.694	5.694	3.737	3.285
Average plunger speed per minute.....	91.916	22.060	22.060	14.948	13.140
Gallons pumped during test.....	63.62	47.48	47.48	36.52	36.52
Gallons pumped per hour.....	129.466	97.396	97.396	85.406	75.372
Gallons pumped per 24 hours.....	12,475.629	3,129.176	3,129.176	2,057.390	1,815.137
Gallons pumped per 40 hours.....	519.818	391.147	391.147	342.868	302.593
Gallons pumped per 24 hours.....	12,475.630	9,487.528	9,487.528	8,229.562	7,265.547
PRINCIPAL RESULTS.					
Foot pounds, main engine.....	35,732.241	6,131.323,066	6,131.323,066	4,153.160,492	3,632.874,093
Foot pounds, feed pump.....	39,597.495	9,310,000	9,310,000	6,272,110	5,462.310
Total foot pounds, work performed.....	25,771.539	6,340,633,036	6,340,633,036	4,159,432,602	3,638,336,403
Duty based upon 100 coal, evaporating to lbs. water per lb. from test, of engine.....	127.554	197.731	197.731	197.539,098	186,837.594
Force power of engine.....	586	432	432	375	328

TABLE NO. 4.**Test of Boilers.**

Date	Nov. 29-30	Dec. 1.	Dec. 2.
Duration of test, hours.....	24	14	6
Manner of stop and start.....	usual	usual	usual
Kind of coal.....	slack	slack	slack
Coal fired.....	27,054	10,908	4,050
Ash and cinder.....	1,832	715	600
Percentage of ash.....	.06.77	.06.6	.14 8
Water fed to boiler.....	235,061	95,489	33 364
Coal per hour, pounds.....	1,123	715	675
Coal per hour per square foot grate, pounds.	14.04	11.92	11.25.
Water per hour.....	9 794	6,821	5 561
Water per hour per square foot H. S.....	2 18	1.9	1 55
Mean boiler pressure.....	77.72	79 82	.81
Temperature feed entering boiler.....	135°	152 5	155°
Temperature escaping gases.....	.....	.....	400°
Water per pound coal.....	8 69	8.75	8.24
Water per pound coal from and at 212°.....	9 4	9 3	8 74
Water per pound combustible.....	9 7	9 36	9.67
Water per pound combustible from and at 212°.....	10 47	9 96	10 26
SUMMARY.			
Gallons water pumped to reservoir per lb. coal fired..	461	475	448
Pounds water evaporated per \$1.00 worth of fuel.....	13,121	13,212	12,442
Gallons water pumped per \$1.00 worth of fuel.....	696.110	717,250	676,480
Pounds feed water actual per I. H. P.....	16.89	16.7	17.
Net pounds dry steam per I. H. P.....	14.5	14.3	14 57

CONCLUSION.

The result of the tests show that the requirements of the contract in the matters of both capacity and economy have been completely fulfilled. Without an effort to exceed the intended speed the excess upon the 12,000,000 rate was nearly 4 per cent, and the behavior of the pumping engine was such as to encourage the belief that a much larger percentage of excess could easily be maintained if necessary. The limitation by the contract to a pressure of eighty pounds at the boilers operated somewhat adversely to the pump at its highest rate of pumping on account of the less number of possible expansions. Without doubt an increase of boiler pressure to 90 or 100 pounds will show a considerable gain in economy. It is gratifying to note that the guaranteed duty was exceeded by the percentages .11.59, .29.7, .41.7, .58 5.

The new pumping engine furnishes the desired increase of capacity to the Water Works in a manner we trust gratifying to the Board of Water Commissioners and satisfactory to the citizens of Erie.

Sincerely yours,
H. R. BARNHURST, M. E.

ANNUAL REPORT
OF THE
COMMISSIONERS
OF
WATER WORKS,
IN THE
CITY OF ERIE,
TO THE
MAYOR AND COUNCILS,
FOR THE
YEAR ENDING DECEMBER 31, 1894.

== = ==.

ERIE, PA.:
TIMES, GRAPHIC AND OBSERVER COMPANY.
1895.

28524

COMMISSIONERS OF WATER WORKS.

The Commissioners of Water Works in the City of Erie are appointed by the Court of Common Pleas of Erie County, Pa., for a term of three years, one member being named annually, in May.

SERVED
IN THE
YEAR

COMMISSIONERS FROM ORGANIZATION TO DECEMBER 31, 1894.

1867	*Wm. L. Scott,	Henry Rawle,	Wm. W. Reed,
1868	*John C. Selden,	Henry Rawle,	Wm. W. Reed,
1869	*John C. Selden,	Henry Rawle,	Wm. W. Reed,
1870	*John C. Selden,	Henry Rawle,	Wm. W. Reed,
1871	*†John C. Selden,	Henry Rawle,	Wm. W. Reed,
1872	Matthew R. Barr,	John Gensheimer,	Wm. W. Reed,
1873	Matthew R. Barr,	John Gensheimer,	Wm. W. Reed,
1874	Matthew R. Barr,	John Gensheimer,	Wm. W. Reed,
1875	Matthew R. Barr,	John Gensheimer,	Wm. W. Reed,
1876	Matthew R. Barr,	John Gensheimer,	Wm. W. Reed,
1877	M. Liebel,	John Gensheimer,	Wm. W. Reed,
1878	M. Liebel,	*J. M. Bryant,	Wm. W. Reed,
1879	M. Liebel,	*J. M. Bryant,	*G. W. F. Sherwin,
1880	M. Liebel,	*J. M. Bryant,	*G. W. F. Sherwin,
1881	M. Liebel,	Benjamin Whitman,	*G. W. F. Sherwin,
1882	M. Liebel,	Benjamin Whitman,	*G. W. F. Sherwin,
1883	M. Liebel,	Benjamin Whitman,	*G. W. F. Sherwin,
1884	M. Liebel,	Benjamin Whitman,	*G. W. F. Sherwin,
1885	M. Liebel,	Benjamin Whitman,	Geo. W. Starr,
1886	C. Kessler,	Benjamin Whitman,	Geo. W. Starr,
1887	C. Kessler,	C. J. Brown,	Geo. W. Starr,
1888	C. Kessler,	C. J. Brown,	Geo. W. Starr,
1889	C. Kessler,	C. J. Brown,	Geo. W. Starr,
1890	C. Kessler,	C. J. Brown,	Geo. W. Starr,
1891	C. Kessler,	C. J. Brown,	Wm. Hardwick,
1892	T. W. Shacklett,	C. J. Brown,	Wm. Hardwick,
1893	T. W. Shacklett,	C. J. Brown,	Wm. Hardwick,
1894	T. W. Shacklett,	C. J. Brown,	Wm. Hardwick.

* Dead.

† Mr. Selden resigned before the expiration of his second term; Mr. Barr was substituted by the other Commissioners, and afterwards appointed by the Court.

THE PRESENT COMMISSIONERS.

WM. HARDWICK, President.

C. J. BROWN.

T. W. SHACKLETT

OFFICE—City Hall.

OFFICE HOURS—From 8.00 A. M., to 5.00 P. M.; on Mondays to 9 P. M.

REGULAR MEETINGS OF THE COMMISSIONERS—Every Saturday at 3:00 P. M., and the first day of each month at 11:00 A. M., except when it occurs on Sunday, then they meet the following day.

OFFICERS AND SALARIES PAID THEM IN 1894.

Commissioners—Wm. Hardwick	\$ 900 00
C. J. Brown.....	900 00
T. W. Shacklett	900 00
Secretary and Treasurer—Wm. Himrod.....	1,916 66
Assistant Secretary Geo. C. Gensheimer.....	1,390 00
Book-Keepers—John Kolb	1,030 00
R. H. Bear.....	910 00
W. W. Todd	350 00
Clerk—M. L. Whitley.....	635 00
Inspectors—John D. Spafford	755 00
Wm. McCleery	755 00
P. F. Weinheimer.....	755 00
Meter Taker—Perry E. Thurber	755 00
Superintendent of Street Work—R. T. Walker.....	1,200 00
Foremen of Street Work—Fred Simons, per day..	2 50
Fred D. Gross, per day.	2 50
Chief Engineer—F. A. Roth..	1,200 00
Assistant Engineers—Geo. R. Miller	900 00
John Kelly.....	900 00
Firemen—R. W. Simons	600 00
Joseph Burns.....	600 00
Jacob Mullen.....	600 00
Watchman at Pumping Station—Michael Flynn.....	600 00
Janitor at Pumping Station—Nathan Block.....	540 00
Keeper of Reservoir—Samuel Phister.....	420 00
Janitress —Mrs. Matilda Sager.....	144 00

ANNUAL REPORT.

To the Mayor, Select and Common Councils of the City of Erie, Pa.:

GENTLEMEN:—We herewith present you the report of our official actions for the year 1894:

The Construction Account, you will notice, is somewhat larger than usual, the principal item of which is the amount paid for the Worthington 12,000,000 gallon pumping engine. As stated in the report of 1893, this engine had been accepted by us on the 6th day of January last, at which time we paid one-half of the contract price and had six and twelve months respectively on the deferred payments with interest. It affords us much pleasure to be able to report that each of these payments were paid several months before they matured, thus saving interest.

At this point we beg to state that the pump has met our most sanguine expectations in every particular. The city is to be congratulated on having so fine a piece of mechanism in its possession.

The extension of mains was but 2,060 8-12 feet more than that of the preceding year, making a total of 89 miles 199 5-12 feet of mains now laid and in active service.

Connections made were less in number and length than last year, making a total of 34 miles 4,760 2-12 feet. We now have all told of mains and connections 123 miles 4,859 7-12 feet.

There has been an increase of 35 fire hydrants, making 479 in use December 31, 1894.

The receipts for water this year are about the same as that of the previous year. This is owing largely to the general business depression that has prevailed throughout the entire country, which has had the effect to check the natural growth of the city

as well as to lessen the consumption of water by some of our manufacturers. Added to this the reduction in the meter rates to a flat rate of six cents per thousand gallons made at the beginning of the year, which alone has caused a loss in the revenue of the Department upwards of Five Thousand Dollars.

Cost of Maintenance Department is somewhat larger than formerly, the greater part of the increase being caused by extensive repairs on the Stand Pipe.

It having come to us from various sources that there was some doubt as to the safety of the Stand Pipe, we desire to say that after thorough investigation and consultation with competent engineers, we were fully persuaded that there were no grounds for apprehension.

It was found advisable to add six feet to the iron part of the Stand Pipe, on which was placed an ornamental finial of six feet, making the increased height twelve feet. The total elevation of the Stand Pipe above the zero level of the bay is now 259.65 feet.

The plaster on the outside of the brick work of the Stand Pipe was entirely removed, all defective brick taken out and new ones inserted, after which it was coated with the best quality of imported cement. It is intended to paint this next spring.

All buildings at the Pumping Station were painted outside and in; the grounds belonging to the same put in complete order, and we may add that with proper patriotic feelings we caused in July last the erection of a 30-foot flag-staff on one of the engine houses, from which floats the stars and stripes on holidays and other important occasions.

Without undue presumption we are perfectly safe in the claim that the city of Erie has, for its size, the best equipped pumping plant in the country.

The fence and keeper's house at the Reservoir were overhauled and thoroughly repaired, and present a greatly improved appearance.

We may say that the entire Water Works property is in first-class condition, and at the close of business, December 31, 1894, we did not owe one dollar and had a balance in the hands of the

Treasurer of the city of Erie of \$18,887.00, and accounts in the sum of \$6,646.74, making the total personal resources \$25,533.74.

It is intended early next spring to begin work on the long-talked-of project of building an in-take pipe across the harbor, through the peninsula and out into the open water of Lake Erie.

To do what should be done to give the city first-class water would require an outlay of \$300,000.00. This sum is not at our command; therefore we will do the best possible with our resources. From all the data we have, we believe that we can build the in-take pipe over to "Big Bend" this year, paying for the same with the money now on hand and our earnings during the year 1895, together with that of the January quarter of 1896. This work is directly in line with and forms a part of the general plan of the in-take pipe to the lake, as prepared by our engineer from surveys made by him, which plans and specifications are on file at this office. Our plans and specifications were referred to Rudolph Hering, C. E., of New York city, who is recognized as standing at the head of his profession as a sanitary and hydraulic engineer, whose services have been called into requisition not only in the United States but also in foreign countries. It is gratifying to us to be able to state that he considers the plans entirely feasible, as reference to his report appended hereto will fully show. It may be stated, however, that while the original plan contemplated the use of steel pipe, it will be noted that while Mr. Hering inclines to that metal, he does not give it his unqualified endorsement; and we have since found out upon investigation at Milwaukee and other points where extensive works of this character have been constructed that the testimony is largely in favor of cast iron pipe, and it is altogether likely its use will be adopted in our work here.

We regret exceedingly that we are unable to push this work to a finish at this time, but believe that the part now contemplated will give our citizens a far superior quality of water to that now furnished; and if your honorable bodies should provide for the building of the much-talked-of intercepting sewer, which this Department has always been on record as considering a necessity, sufficient time would then be afforded for the accumulation of means to complete this work, and also to allow us revenue neces-

sary to lay larger distributing mains, thus enabling us to keep pace with the growth of the manufacturing industries of our city; also to provide better general fire protection.

We desire to thank you for placing at our disposal the room now occupied by the Honorable Select Council. The constantly increasing business of the Department has made larger office quarters necessary, and this addition is duly appreciated.

The day is not far distant when it will be an absolute necessity to have additional boilers, and the experience of the past twelve months has demonstrated that it is unwise to depend on a supply of fuel furnished in car-load lots from day to day. Storing capacity for 3,000 to 4,000 tons of fuel should be provided for in the near future, and we trust your honorable bodies will favorably consider our application of September 24, 1894, for the five (5) water lots lying immediately east of the Pumping Station for the purpose of erecting new boiler house and buildings for the storage of coal in large quantities.

Respectfully submitted,

WM. HARDWICK,
C. J. BROWN,
T. W. SHACKLETT,

Commissioners of Water Works in the City of Erie.

**Monthly Receipts from all Sources During the Year
Ending December 31, 1894.**

MONTH.	ASSESSMENT.	METER.	SPECIAL.	PLUMBING.	BUILDING.	TOTAL.
January .	\$ 17,877 55	\$ 4,815 43	\$ 16 92	\$ 81 52	\$ 32 58	\$ 22,824 00
February	3,556 96	911 96	4 28	16 31	141 59	4,631 10
March...	562 14	252 08	2 70	276 39	35 23	1,128 54
April....	18,426 51	4,713 12	23 21	54 74	88 89	23,306 47
May.....	2,309 10	115 93	29 92	70 51	77 11	2,602 57
June	538 30	562 34	30 37	21 48	123 59	1,276 08
July.....	19,798 27	5,445 67	22 92	136 11	37 43	25,440 40
August..	1,982 07	86 87	29 25	262 51	66 95	2,427 65
Septem'r	331 19	.....	17 76	80 46	42 56	471 97
October..	19,222 67	4,408 42	22 22	14 07	68 16	23,735 54
Nov.....	2,666 66	1,313 15	11 25	94 68	55 82	4,141 56
Dec	175 26	714 72	21 75	955 45	33 11	1,900 29
Total..	\$ 87,446 68	\$ 23,339 69	\$ 232 55	\$2,064 23	\$803 02	\$113,886 17

**Receipts from Each Ward During the Year Ending
December 31, 1894.**

WARD.	ASSESSMENT.	METER.	SPECIAL.	PLUMBING.	BUILDING.	TOTAL.
First .	\$ 12,173 83	\$ 3,013 63	\$ 40 46	\$ 27 16	\$ 68 29	\$ 15,323 37
Second..	19,589 36	11,646 00	39 94	947 83	138 60	32,361 73
Third ...	21,768 62	3,638 57	38 42	593 19	195 83	26,234 63
Fourth..	16,804 43	698 42	56 25	241 50	246 70	18,047 30
Fifth ...	7,160 68	3,608 17	30 45	14 57	77 14	10,891 01
Sixth....	9,123 02	680 58	8 67	38 62	69 01	9,919 90
Seventh.	826 74	54 32	18 36	201 36	7 45	1,108 23
Total..	\$ 87,446 68	\$ 23,339 69	\$ 232 55	\$2,064 23	\$803 02	\$113,886 17

Cash Account of Secretary and Treasurer of Commissioners of Water Works in the City of Erie. for the Year Ending December 31, 1894.

Month.	Receipts.	Deposited with Treasurer City of Erie.	Balance in Office at Close of Business each Month
January	\$ 22,824 00	\$ 21,275 63	\$ 1,548 37
February	4,631 10	6,097 56	81 91
March	1,128 54	1,081 38	129 07
April	23,306 47	19,919 82	3,515 72
May	2,602 57	5,373 98	744 31
June	1,276 08	1,892 23	128 16
July	25,440 40	22,645 83	2,922 73
August	2,427 65	5,235 16	115 22
September	471 97	484 23	102 96
October	23,735 54	21,238 88	2,599 62
November	4,141 56	6,683 06	58 12
December	1,900 29	1,958 41	.....
Total	\$113,886 17	\$113,886 17	

Statement of Account With Treasurer of the City of Erie, Pa., for the Year Ending December 31, 1894.

Month.	Received from Secretary and Treasurer Commissioners of Water Works.	Paid on Warrants of Commissioners of Water Works.	Monthly Balances.
Balance from 1893	\$ 21,296 17	.....	.....
January	21,275 63	\$ 28,394 83	\$ 14,176 97
February	6,097 56	14,817 24	5,457 29
March	1,081 38	5,351 25	1,187 42
April	19,919 82	12,658 56	8,448 68
May	5,373 98	3,712 33	10,110 33
June	1,892 23	10,296 27	1,706 29
July	22,645 83	9,110 75	15,241 37
August	5,235 16	7,371 72	13,104 81
September	484 23	5,677 52	7,911 52
October	21,238 88	4,359 68	24,790 72
November	6,683 06	6,686 31	24,787 47
December	1,958 41	7,858 88	18,887 00
Total	\$135,182 34	\$116,295 34	

Amount of Water Rents Collected Each Year, with the Increase and Decrease Since the Commencement of the Works.

	AMOUNT REC'D.	INCREASE.	DECREASE.
From Jan. 1, 1869, to Dec. 31, 1869....	\$ 4 264 47	.....	.....
" " 1870, to " 1870....	9,237 30	\$ 4.972 83	.....
" " 1871, to " 1871....	18,138 08	8,900 78	.....
" " 1872, to " 1872....	21,652 68	3,514 60	.....
" " 1873, to " 1873....	25,560 40	3,907 72	.....
" " 1874, to " 1874....	27,938 90	2,378 50	.....
" " 1875, to " 1875....	29,639 38	1,700 48	.....
" " 1876, to " 1876....	31,048 76	1,409 38	.....
" " 1877, to " 1877....	32,276 57	1,227 81	.....
" " 1878, to " 1878....	29,636 01	.....	\$ 2,640 56
" " 1879, to " 1879....	33,343 20	3,707 19	.....
" " 1880, to " 1880....	37,385 00	4,041 80	.....
" " 1881, to " 1881....	40,385 87	3,000 87	.....
" " 1882, to " 1882....	43,818 73	3,432 86	.....
" " 1883, to " 1883....	48,269 89	4,451 16	.....
" " 1884, to " 1884....	51,852 78	3,582 89	.....
" " 1885, to " 1885....	53,550 35	1,697 57	.....
" " 1886, to " 1886....	58,725 00	5,174 65	.....
" " 1887, to " 1887....	67,121 92	8,396 92	.....
" " 1888, to " 1888....	73,197 03	6.075 11	.....
" " 1889, to " 1889....	81,110 68	7,913 65	.....
" " 1890, to " 1890....	87,279 96	6 169 28	.....
" " 1891, to " 1891....	93,891 55	6,611 59	.....
" " 1892, to " 1892....	105,527 03	11,635 48	.....
" " 1893, to " 1893....	111,247 43	5,720 40	.....
" " 1894, to " 1894....	111.821 94	574 51	.....
Total	\$ 1,327,920 91		

DISBURSEMENTS.

Ledger Folio	Department.	Account.	For the Year 1894.			From beginning of Works to December 31, 1894.
			Labor.	Material.	Total.	
1	Construction.	Ad., Books, Sta. and Prtg.....	a\$ 42 95	\$ 14 26	\$ 57 21	\$ 204 23
2		Buildings and Grounds				86,647 19
4		Boilers	a			3,364 13
7		Civil Engineering				8,554 80
13		Connections	d 2,214 87	1,351 44	3,566 31	101,366 12
24		Drinking Fountains	d 139 49	520 90	660 39	660 39
26		Engines and Boilers				93,336 61
27		Engines	a			15 05
29		Engine No. 4.....	b 1,125 03	46,580 67	47,705 70	48,353 18
720		Engine House No. 3.....	b 42 23	1,004 34	1,046 57	21,401 94
32		Engine Room, Fur. and Fix..	a 1 01	41 77	42 78	1,398 26
34		Expense	a 144 30	4 99	149 29	199 31
36		Electric Light Plant.....	a			722 98
39		Fire Hydrants	a 299 89	1,130 38	1,430 27	24,010 78
45		Fuel.....	a 63	26 21	26 84	122 51
47		Gas Well.....				8,148 59
51		Horse, Wagon and Cartage...		274 41	354 24	3,773 81
53		Inlet Pipe No. 1				49,474 30
54		Inlet Pipe No. 2.....	b 1 14	47 09	48 23	8,019 38
55		Interest and Discount.....				99,420 95
56		Light—Oil, Lamps, Wicks, etc	a 50	20 55	21 05	102 99
59		Lowering Mains.....				584 31
66		Mains and Branches.....	6,325 38	11,083 61	17,408 99	496,306 00
85		Main, 30-inch.....				75,955 61
89		Meters	246 56	195 62	442 18	15,210 26
100		Office Furniture and Fixtures	a 3 12	129 33	132 45	953 50
102		Oil and Tallow.....	b			2 86
104		Paving and Street Repairs...	b			4 07
109		Park Fountains.....				3,244 68
110		Railroad Switch and Scales...				2,918 92
111		Reservoir				123,150 83
114		Stop Valves.....	176 03	1,078 05	1,254 08	29,417 03
117		Superintendent's Stores.....				217 05
119		Superintendent's Expense...	a			52 82
122		Shop Rent.....	a 2 74	113 31	116 05	421 93
126		Tools and Repairs.....	104 49	181 73	286 22	1,031 52
130		Telephone and Telegraph....	a 04	1 61	1 65	11 09
136	Maintenance.	Adv., Books, Sta. and Prtg...	a 43 35	31 03	74 38	179 29
140		Buildings and Grounds	a 1,883 76	830 74	2,714 50	5,728 06
142		Boilers, to Dec. 31, 1892.....				18,365 58
143		Boiler No. 1.....	c 31 38	204 42	235 80	412 17
144		Boiler No. 2.....	c 31 45	207 60	239 05	421 28
145		Boiler No. 3.....	c 31 13	194 04	225 17	402 50
146		Boiler No. 4.....	c 33 06	273 86	306 92	469 76
147		Boiler No. 5.....	c 22 46	98 01	120 47	181 38
148		Boiler No. 6.....	c 21 60	61 36	82 96	167 22
149		Boiler House	c 183 95	284 48	468 43	469 72
155		Connections.....	913 55	635 95	1,549 50	5,962 25
170		Drinking Fountains.....	d 9 46	20	9 66	9 66
174		Engines, to Dec. 31, 1892.....				13,402 04
175		Engine No. 1.....	c 59	24 23	24 82	58 11
178		Engine No. 2.....	c 59	24 25	24 84	89 69
181		Engine No. 3.....	c 38 53	111 00	149 53	240 38
184		Engine No. 4.....	d 3 28	135 60	138 88	138 28
197		Engine House No. 1.....	c 201 39	708 81	910 20	990 71
200		Engine House No. 2.....	c 84 27	387 88	472 15	616 13
203		Engine House No. 3.....	c 54 43	185 03	249 46	326 91
205		Engineer's Stores.....	b			1 05
208		Engine Room, Fur. and Fix..	a 3 29	136 20	139 49	168 02

DISBURSEMENTS—Continued.

Ledger Folio	Department	Account.	For the Year 1894.			From beginning of Works to December 31, 1894.
			Labor.	Material.	Total.	
		Expense.....	a\$ 144 52	\$ 12 90	\$ 157 42	\$ 182 49
		Electric Light Plant.....	b 1 70	70 54	72 24	118 20
		Fire Hydrants	a 308 15	101 35	409 50	1,138 77
		Fuel.....	a 63	28 19	28 82	76 64
		Horse, Wagon and Cartage...	79 87	276 50	356 37	3,779 15
		Inlet Pipe No. 1.....	a.....			111 80
		Light—Oil, Lamps, Wicks, etc	a 39	16 06	16 45	49 41
		Mains and Branches	563 54	53 64	617 18	17,176 56
		Main, 30-inch.....	a.....			899 33
		Meters.....	135 15	352 07	487 22	4,316 05
		Office Furniture and Fixtures	a 1 85	76 62	78 47	100 75
		Oil and Tallow.....	b.....			2 24
		Paving and Street Repairs.....	a.....			449 94
		Railroad Switch and Scales.....	a.....			375 68
		Reservoir.....	617 50	614 99	1,232 49	23,547 94
		Stand Pipe.....	c 2,181 83	1,167 20	3,349 03	3,349 80
		Stop Valves.....	334 76	80 22	414 98	4,170 11
		Superintendent's Stores.....				396 52
		Superintendent's Expense.....	a.....			52 56
		Shop Rent.....	a 2 73	113 07	115 80	421 69
		Tools and Repairs.....	108 60	256 68	365 28	4,371 39
		Waste and Packing.....	b.....			22 18
	Operating.	Adv., Books, Sta. and Prtg.....	a 51 12	352 72	403 84	663 59
		Buildings and Grounds.....	b 1,167 53		1,167 53	2,413 96
		Engineers and Firemen	5,098 41		5,098 41	111,851 83
		Engineer's Stores.....				2,348 57
		Expense.....	a 40 73	140 89	181 62	540 46
		Electric Light Plant.....	b 05	2 00	2 05	31 60
		Fire Hydrants.....	b 90 87		90 87	91 07
		Fuel.....	108 15	4,477 69	4,585 84	149,809 84
		Horse, Wagon and Cartage.....	d 88	36 42	37 30	37 30
		Inspectors.....	c 2,328 46		2,328 46	4,307 18
		Insurance.....	3 85	159 30	163 15	1,153 35
		Light—Oil, Lamps, Wicks, etc	a 44	18 22	18 66	240 74
		Meters.....	b 775 42	5 51	780 93	1,219 93
		Oil and Tallow.....	20 11	832 43	852 54	10,596 95
		Reservoir.....	b 430 28	5 76	436 04	1,321 84
		Rent of Office.....	b 1 18	48 87	50 05	407 12
		Tools and Repairs.....	a 2 24	92 67	94 91	240 71
		Taxes—State, County & School	8 93	369 57	378 50	1,479 33
		Telephone and Telegraph....	a 3 91	161 72	165 63	515 60
		Waste and Packing.....	7 32	303 14	310 46	4,687 89
		Water Rents Returned.....	18 74	775 97	794 71	1,011 94
	Accounting.	Adv., Books, Sta. and Prtg.....	8 69	359 79	368 48	8,437 17
		Expense.....	2 83	16 37	19 20	14,741 27
		Horse, Wagon and Cartage ..	b.....			17 80
		Postage.....	9 41	389 64	399 05	5,232 96
		Salaries.....	6,559 23		6,559 23	161,258 81
	Sundries.	City of Erie Sink'g Fund Com.				105,500 00
		City of Erie.....	a.....			6 41
	Legal.	Court Costs.....				478 40
		Counsel Fees.....	368 15		368 15	3,158 53
		Expense.....	a 53 77		53 77	89 02
		Totals.....	\$ 36,183 67	\$80,111 67	\$116,295 34	\$2,019,573 04

a Accounts started in 1891.
b Accounts started in 1892.
c Accounts started in 1893.
d Accounts started in 1894.

RECAPITULATION.

Department.	For the Year 1894.				From beginning of Works to December 31, 1894.
	Pro Rata.	Labor.	Material.	Total.	
Construction.....	6427643 +	\$ 10,950 23	\$ 63,800 27	\$ 74,750 50	\$1,311,780 07
Maintenance	1361650 +	8,072 74	7,762 72	15,835 46	113,911 40
Operating.....	1542753	10,158 62	7,782 88	17,941 50	294,960 80
Accounting.....	0631664	6,580 16	765 80	7,345 96	189,687 51
Sundries					105,506 41
Legal.....	0036280 +	421 92		421 92	3,725 95
Totals.....	9999999 +	\$ 36,183 67	\$ 80,111 67	\$116,295 34	\$2,019,573 04

1894. Statement of Accounts with City of Erie, Pa. 1894.

CITY OF ERIE, PA.		DR.°	
WATER—			
Fire Hydrants.....	\$ 46,200 00		
Park Fountains.....	1,251 05		
Flushing Sewers.....	1,150 00		
Lake Eront Park, 3 years...	216 00		
City Hall.....	203 00		
Engine Houses.....	165 95		
East Park, 3 years.....	150 00		
West Park, 3 years..	150 00	\$49,486 00	
INTEREST—			
From Second Nat'l Bank			
Balances, Oct. 1, 1893, to			
April 1, 1894	157 46		
April 1, 1894, to Oct. 1,			
1894.....	87 24	244 70	
Balance		685,677 06	\$735,407 76
CREDITS.			
BALANCE—December 31, 1893.....		692,648 83	
INTEREST—On same to December 31,			
1894.....		41,558 93	
RENT—Of Offices one year.....		1,200 00	\$735,407 76
Balance			\$685,677 06

PLANT NORTH OF FRONT STREET - Buildings and Grounds,
including Piers.
ENGINE HOUSE NO. 3, from January 1, 1892.

Boilers from January 1, 1891.....	\$105,794 69	
Engines and Boilers to January 1, 1891.....	21,591 35	\$127,386 04
Engine No. 4, from January 1, 1892.....	3,409 15	
	104,325 20	
	49,058 00	156,792 35
Electric Light Plant.....		
Engine Room Furniture and Fixtures.....	732 69	
Inlet Pipes - No. 1.....	1,549 20	
No. 2 from January 1, 1892.....	55,568 44	
	9 619 02	65,187 46
Railroad Switch and Scales.....	3,262 09	\$354,909 83

PLANT SOUTH OF FRONT STREET—Connections.....	110,265 67	
Drinking Fountains from January 1, 1894.....	669 64	
Fire Hydrants.....	25,725 65	
Mains and Branches.....	\$543,385 26	
Main, 30-inch.....	83,327 29	
Meters.....		
Stop Valves.....	16,155 50	
	32,141 11	811,670 12
Office Furniture and Fixtures.....		
Reservoir.....	968 28	
	137,629 35	950,267 75
		1,305,177 58

PERSONAL--Cash in hands of Treasurer of City of Erie.....		
ACCOUNTS--Assessed.....		
Meter.....	673 01	
Plumbing.....	5,948 13	
	6,621 14	
	25 60	6,646 74
		25,533 74
		\$1,330,711 32

ACCOUNTS - City of Erie, Pa.....		
Advanced on Assessed.....	685,677 06	
Balance.....	174 67	685,851 73
		644,859 59
		\$1,330,711 32

Statement of Meters—December 31, 1894.

KIND.	IN USE.							NOT IN USE.							TOTAL.									
	SIZE.							SIZE.							SIZE.									
	3	4	1	1½	2	3	4	Total	3	4	1	1½	2	3	4	Total	3	4	1	1½	2	3	4	Total
Worthington.....	2	10	5	2	1	...	20	20	2	...	2	...	1	...	...	3	4	10	5	3	1	...	23	
Thomson.....	1	5	4	4	3	1	4	22	2	1	1	1	1	...	...	5	3	6	5	4	4	1	4	27
Crown	4	3	1	7	1	1	17	17	1	...	...	...	...	...	1	3	1	4	3	1	8	1	2	20
Empire.....	...	2	3	...	...	...	5	5	...	...	...	...	...	...	...	...	...	...	2	...	3	...	...	5
National .....	...	1	...	...	...	...	1	1	...	...	...	...	...	...	...	...	...	...	1	...	...	...	...	1
Union.....	28	3	6	10	4	8	59	59	3	1	1	1	...	...	...	5	...	31	3	7	10	5	8	64
Total.....	1	39	22	17	25	7	13	124	3	6	1	1	3	1	16	4	45	23	18	28	8	14	140	

One $\frac{3}{4}$ -inch Crown kept by manufacturer, not worth repairingOne $\frac{3}{4}$ -inch Crown meter entered in last Annual Report as our meter, but was private property, belonging to Metric Metal Co

KIND.	(GOOD.)										POOR.										TOTAL.
	SIZE.					Total	SIZE.					Total	SIZE.								
	$\frac{3}{4}$	1	1 $\frac{1}{2}$	2	3		4	$\frac{3}{4}$	1	1 $\frac{1}{2}$	2			3	4						
Worthington	4			3	1	23															
Thomson	3	6		4	1	4	27														
Crown	1	4		8	1	2	20														
Empire				3			5														
National							1														
Union	31		10	5	8	64															
Total	4	45	23	18	28	8	140														

Pumping Engine Statistics for 1894.

The pumps are four in number. Nos. 1 and 2 are known as the Corish Bull Pumps. The diameter of each plunger is 20¾ inches, and each as a stroke of 10 feet. The capacity of each pump is estimated to be 65 gallons to each stroke. Pump No. 3 is a Gaskill Horizontal Compound Pumping Engine, having two H. P. cylinders 21 in. diameter, two L. P. cylinders 42 in. diameter, and two pumps 19½ in. diameter, and all 6 in. stroke, of a guaranteed capacity of 5,000,000 gallons daily at a piston speed of 120 feet per minute against a head of 237 feet. Pump No. 4 is a Vorthington Horizontal Compound High Duty Engine, having two H. P. cylinders 33 in. diameter, two L. P. cylinders 66 in. diameter, and two pumps 29 in. diameter, and all 49¾ in. stroke, of a guaranteed capacity of 2,000,000 gallons daily at a piston speed of 128 feet per minute against a head of 260 feet. The Stand Pipe is 259.65 feet high. The Reservoir is nearly two miles from the Pumping Works, the bottom of which is 210 feet above the surface of the Bay, and the water has been maintained during the year at an average depth in the Reservoir of 25.10 feet.

No. 3.		No. 4.		Totals.		Daily Average.	Average Lift in Feet.
Days Run.	Gallons.	Days Run.	Gallons.	Days Run.	Gallons.		
..	.....	22	140,304,600	22	140,304,600	4,525,954	237.02
..	.....	22	138,978,144	22	138,978,144	4,963,505	236.87
..	7 34,582,184	19	120,185,856	26	154,768,040	4,992,517	236.17
1.	.....	21	132,137,208	21	132,137,208	4,405,573	236.07
..	.....	27	143,294,232	27	143,294,232	4,622,394	236.09
..	.....	30	150,435,456	30	150,435,456	5,014,515	235.73
..	4 19,699,680	27	162,255,984	31	181,955,664	5,869,537	236.16
..	.....	31	177,025,296	31	177,025,296	5,710,493	236.71
..	7 33,216,092	26	128,368,704	33	161,584,796	5,386,159	236.83
..	4 12,978,056	29	132,807,888	33	145,785,944	4,702,772	236.98
..	3 17,034,108	27	123,335,016	30	140,369,124	4,678,970	237.21
..	12 61,145,630	19	88,812,384	31	149,958,014	4,837,355	237.26
1,	37 178,655,750	300	1,637,940,768	337	1,816,596,518	4,976,976	†236.59

engines Nos. 1 and 2 were not used in 1891.

The regular employes at the Pumping Works are one chief engineer, two assistant engineers, three firemen, one watchman and one janitor. The chief engineer stands a watch of five hours, from 7 to 12 every forenoon; the assistants divide the remainder of each day equally between them; each one of the firemen stands a watch of eight hours. Besides firing, the firemen unload the coal from the cars, except when two pumps are run, in which case they are assisted by the watchman or a laborer. The chief engineer gives ten hours daily to the service of the Commissioners of Water Works in the City of Erie, the hours when he is not on watch being employed in repairs, supervision, etc. In addition to standing their regular watch, the assistant engineers aid their superior officer in keeping the machinery in order. The watchman takes care of the rounds and does such other work as may be required of him. The janitor takes care of the buildings.

Statement of Meters—December 31, 1894.

	IN USE.										NOT IN USE.										TOTAL.									
	SIZE.										SIZE.										SIZE.									
	$\frac{1}{8}$	$\frac{3}{8}$	1	1 $\frac{1}{2}$	2	3	4	Total	$\frac{1}{8}$	$\frac{3}{8}$	1	1 $\frac{1}{2}$	2	3	4	Total	$\frac{1}{8}$	$\frac{3}{8}$	1	1 $\frac{1}{2}$	2	3	4	Total						
Worthington.....		2	10	5	2	1	...	20			2	...	1	...	...	3		4	10	5	3	1	...	23				
Thomson.....	1	5	4	4	3	1	4	22	2	1	1	...	1	...	...	5	3	6	5	4	4	1	4	27				
Crown		4	3	1	7	1	1	17	1	...	...	...	...	1	...	3	1	4	3	1	8	1	2	20		
Empire .....		...	2		3			5			...	...	...	...	...	...	...	...	2	...	3	...	...	5
National				1				1			...	...	...	...	...	...	...	...	...	...	...	...	1	
Union.....		28	3	6	10	4	8	59	3		1	...	1	...	5	...	31	3	7	10	5	8	64							
Total	1	39	22	17	25	7	13	124	3	6	1	1	3	1	1	16	4	45	23	18	28	8	14	140						

One $\frac{1}{8}$ -inch Crown kept by manufacturer, not worth repairingOne $\frac{3}{8}$ -inch Crown meter entered in last Annual Report as our meter, but was private property, belonging to Metric Metal Co

KIND.	GOOD.										POOR.										TOTAL.									
	SIZE.										SIZE.										SIZE.									
	$\frac{1}{8}$	$\frac{3}{8}$	1	1 $\frac{1}{2}$	2	3	4	Total	$\frac{1}{8}$	$\frac{3}{8}$	1	1 $\frac{1}{2}$	2	3	4	Total	$\frac{1}{8}$	$\frac{3}{8}$	1	1 $\frac{1}{2}$	2	3	4	Total						
Worthington			4	10	5	3	1	23																						
Thomson	3	6	5	4	4	1	4	27																						
Crown.	1	4	3	1	8	1	2	20																						
Empire.			2		3			5																						
National					1			1																						
Union.		31	3	7	10	5	8	64																						
Total.	4	45	23	18	28	8	14	140																						

Pumping Engine Statistics for 1894.

The pumps are four in number. Nos. 1 and 2 are known as the Cornish Bull Pumps. The diameter of each plunger is 20 $\frac{3}{4}$ inches, and each has a stroke of 10 feet. The capacity of each pump is estimated to be 165 gallons to each stroke. Pump No. 3 is a Gaskill Horizontal Compound Pumping Engine, having two H. P. cylinders 21 in. diameter, two L. P. cylinders 42 in. diameter, and two pumps 19 $\frac{1}{2}$ in. diameter, and all 36 in. stroke, of a guaranteed capacity of 5,000,000 gallons daily at a piston speed of 120 feet per minute against a head of 237 feet. Pump No. 4 is a Worthington Horizontal Compound High Duty Engine, having two H. P. cylinders 33 in. diameter, two L. P. cylinders 66 in. diameter, and two pumps 29 in. diameter, and all 49 $\frac{3}{4}$ in. stroke, of a guaranteed capacity of 12,000,000 gallons daily at a piston speed of 128 feet per minute against a head of 260 feet. The Stand Pipe is 259.65 feet high. The Reservoir is nearly two miles from the Pumping Works, the bottom of which is 210 feet above the surface of the Bay, and the water has been maintained during the year at an average depth in the Reservoir of 25.10 feet.

Months	No. 3.		Days Run.	No. 4.		Days Run.	Totals.		Average Lift in Feet.
	Days Run.	Gallons.		Gallons.	Days Run.		Gallons.	Daily Average.	
Jan...			22	140,304,600	22	140,304,600	4,525,954	237.02	
Feb...			22	138,978,144	22	138,978,144	4,963,505	236.87	
Mar... 7	34,582,184	19	120,185,856	26	154,768,040	4,992,517	236.17		
April...		21	132,137,208	21	132,137,208	4,405,573	236.07		
May...		27	143,294,232	27	143,294,232	4,622,394	236.09		
June...		30	150,435,456	30	150,435,456	5,014,515	235.73		
July... 4	19,699,680	27	162,255,984	31	181,955,664	5,869,537	236.16		
Aug...		31	177,025,296	31	177,025,296	5,710,493	236.71		
Sep... 7	33,216,092	26	128,368,704	33	161,584,796	5,386,159	236.83		
Oct... 4	12,978,056	29	132,807,888	33	145,785,944	4,702,772	236.98		
Nov... 3	17,034,108	27	123,335,016	30	140,369,124	4,678,970	237.21		
Dec... 12	61,145,630	19	88,812,384	31	149,958,014	4,837,355	237.26		
Total,	37	178,655,750	300	1,637,940,768	337	1,816,596,518	4,976,976	†236.59	

Engines Nos. 1 and 2 were not used in 1894.

The regular employes at the Pumping Works are one chief engineer, two assistant engineers, three firemen, one watchman and one janitor. The chief engineer stands a watch of five hours, from 7 to 12 every forenoon; the assistants divide the remainder of each day equally between them; each one of the firemen stands a watch of eight hours. Besides firing, the firemen unload the coal from the cars, except when two pumps are run, in which case they are assisted by the watchman or a laborer. The chief engineer gives ten hours daily to the service of the Commissioners of Water Works in the City of Erie, the hours when he is not on watch being employed in repairs, supervision, etc. In addition to standing their regular watch, the assistant engineers aid their superior officer in keeping the machinery in order. The watchman takes care of the grounds and does such other work as may be required of him. The janitor takes care of the buildings.

ASSESSMENTS FOR 1895.

ITEMS ASSESSED.	WARDS.										TOTALS.					
	FIRST.		SECOND.		THIRD.		FOURTH.		FIFTH.				SIXTH.		SEVENTH.	
	No.	Amt.	No.	Amt.	No.	Amt.	No.	Amt.	No.	Amt.			No.	Amt.	No.	Amt.
Air Pumps	3	\$ 9 00	12	\$ 36 00	18	\$ 54 00	4	\$ 12 00	3	\$ 9 00	4	\$ 12 00			44	\$ 132 00
Barber Chairs	21	58 00	35	112 00	41	116 00	20	56 00	10	34 00	10	28 00			137	404 00
Bakeries			5	25 00	4	28 72	4	23 00	3	15 00	6	34 36			22	126 08
Banks	3	15 00			1	10 00	2	10 00							6	35 00
Bath Tubs	241	702 00	198	689 00	482	1,419 17	464	1,337 50	67	201 00	118	333 00	2	9 00	1572	4,670 67
Billiard Tables			12	8 00	18	18 00	8	8 00			4	4 00			42	38 00
Blacksmith Fires	4	17 50	10	42 50	12	45 00	3	12 50	2	10 00	2	7 50			33	135 00
Book Binderies	1	3 00													1	3 00
Boat Houses	1	10 00													1	10 00
Bottling Works	1	5 00	2	16 00			1	10 00							4	31 00
Board of Trade															1	5 00
Bonds	5	79 60	5	44 84	13	64 95	6	64 51	14	45 79	14	156 54	5	252 22	62	708 45
Churches							7	35 00			2	10 00			24	114 00
Chapels and Vaults															1	5 00
Club Rooms	7	23 00													33	117 00
Cows	15	10 75	15	12 75	12	9 00	16	12 00	28	21 00	19	14 25	4	4 48	109	84 23
Carpet Cleaners	1	3 00					1	3 00							2	6 00
Charity Bureau	1	1 67													1	1 67
Dye Works			2	17 00	1	5 00									3	22 00
Eating Houses	3	16 00	2	8 00	17	81 00	7	27 00							29	132 00
Elevators			3	10 00	1	60 00	1	6 00							5	76 00
Engine Houses	1	5 00	1	5 00	1	10 00	1	5 00	1	5 00	2	10 00			7	40 00
Engines, H. Power	76	162 50	282	571 75	149	327 50	105	133 11	67	85 70	20	39 00	55	99 38	754	1,418 94
Families	1228	6,133 34	2240	11,200 00	1658	8,230 00	1321	6,605 00	876	4,380 00	1068	5,340 00	42	315 00	8433	42,283 34
Fish Ponds							1	30 00							1	30 00
Fish Hatchery							1	400 00							1	400 00
Fountains					4	30 00	3	162 50							7	192 50
Glass Washers							2	20 00							2	20 00
Green Houses							5	5 45	2	20 06	2	52 30	2	56 50	8	143 81
Horses	171	229 00	333	457 00	389	543 00	290	389 00	151	228 00	191	270 00	14	25 50	1558	2,139 50
Horse Sheds											1	5 00			1	5 00
Heating Bls., H. P.	271	64 58	149	40 25	517	145 42	511	151 00	62	15 50	69	19 25	40	15 00	1619	451 00

Hand Basins	250	\$ 245 82	331	\$ 292 50	730	\$ 613 17	624	\$ 500 50	35	\$ 32 70	110	\$ 17 84	2	\$ 3 00	2132	\$ 1,704 34
Ice Cream Parlors			1	5 00											1	5 00
Lodging Rooms	216	207 33	323	323 00	476	476 00	167	167 00	12	42 00	31	31 00			1285	1,276 33
Laundries	1	5 00	3	15 00	2	10 00	1	5 00							7	35 00
Meat Markets	11	48 00	20	111 00	15	87 00	11	48 00	7	30 00	7	30 00			71	372 00
Marble Works	1	5 00													2	8 00
Milk Depots	1	5 00			1	5 00	3	11 00			1	3 00			5	21 00
Museums					1	15 00									1	15 00
Opera Houses					1	5 00	1	10 00							2	15 00
Offices	64	176 23	92	291 00	95	329 00	74	337 00	1	3 00	4	12 00			330	1,148 23
Printing Offices	4	48 00	1	30 00	3	35 00	3	13 00							11	126 00
Public Halls	8	40 00	6	30 00	14	71 67	8	40 00	2	10 00	2	10 00			40	201 67
Photograph Rooms			4	20 00	4	20 00	1	5 00	1	5 00					10	50 00
Passenger Depots																
Stores	64	265 00	132	502 00	173	770 00	78	311 00	37	117 00	37	125 00			521	2,090 00
Saloons	7	35 00	33	165 00	28	140 00	12	60 00	11	55 00	7	35 00	1	7 50	90	497 50
School Scholars	935	85 76	1550	155 00	1698	169 80	624	62 40	721	72 10	825	78 50			6353	623 56
Schools, Sabbath	1	3 00			2	10 00									3	13 00
Slaughter Houses				8 00	1	5 00			1	5 00					3	18 00
Sprinklers, Hydrant	44	162 32	30	149 45	61	241 50	71	330 80	32	127 85	47	213 82			294	1,225 74
Sprinklers, Sill Cks.	200	625 85	243	808 10	432	1,339 64	349	1,113 94	163	562 00	251	855 40	5	22 01	1643	5,326 94
" Lawn	45	198 35	50	188 60	100	467 34	88	443 85	40	138 75	46	178 47	7	36 30	376	1,651 63
" Curb	55	204 70	56	217 10	121	444 25	155	648 87	37	130 70	92	130 88	2	7 84	458	1,784 35
" In House	48	174 00	83	271 20	70	241 85	42	150 80	54	188 90	69	224 10	2	9 00	368	1,257 85
" Adj. Lot.	15	45 60	28	98 25	38	120 40	36	114 50	10	29 52	11	41 83			138	448 12
Total Sprinkling	407	1,410 82	490	1,730 70	822	2,855 00	741	2,802 76	336	1,175 72	456	1,644 52	16	75 15	3277	11,604 76
U. S. Str. Michigan															1	30 00
Urinals	35	91 44	57	169 00	102	321 00	52	136 00	6	25 00	14	40 67			286	783 11
Warehouses	1	3 00	3	25 00											4	28 00
Work Shops	10	37 00	40	144 00	39	140 00	23	73 00	6	20 00	5	19 00	2	15 00	125	448 00
Wash Tubs	90	117 34	54	82 00	228	320 00	227	310 00	6	9 00	44	35 00			649	873 34
" Revolv'g	2	10 00	2	10 00	4	20 00	3	15 00							11	55 00
Total Wash Tubs	92	127 34	56	92 00	232	340 00	230	325 00	6	9 00	44	35 00			660	928 34
Water Closets, S. C.	52	176 00	51	171 50	119	308 00	94	284 00	9	36 00	20	60 00			345	1,125 50
" Non-C.	78	186 00	86	218 50	84	140 00	67	214 00	1	6 00	24	39 00			340	883 50
" P. or T.	490	1,307 82	663	2,079 50	1161	3,459 50	843	2,330 00	132	447 00	201	615 50	4	18 00	3494	10,347 82
Total W. Closets	620	1,750 82	800	2,469 50	1364	3,997 50	1004	2,828 00	142	489 00	245	714 50	4	18 00	4179	12,276 32
Water Troughs				50 00	2	20 00	1	10 00	9	90 00	2	20 00			19	190 00
Water Motors					4	35 00	4	20 00							8	55 00
Yacht Mystic								3 00							1	3 00
Grand Totals	4822	\$12,146 51	7272	\$19,941 79	9181	\$21,820 90	6490	\$17,380 73	2649	\$7,246 87	3530	\$9,248 23	189	\$985 73	33839	\$88,706 35

Main Pipes Laid in 1894.

LOCATION.	SIZES.					REMARKS.
	1½ in.	2 inch.	4 inch.	6 inch.	12 inch.	
	ft. in.	ft. in.	ft. in.	ft. in.	ft. in.	
Front, bet. German and Parade	516	{ 494 ⁶ ft ¾ in removed.
2d, bet. Plum and Cascade	526 3	.....	.....
3d, bet. State and French	262 9	.....
3d, bet. Poplar and Liberty	145 4	.....	.....
5th, " " "	381 6	14 10	313	H. B.
7th, " " "	7	.....	.....
7th, bet. Cascade and Rasp'y	300 3	.....
7th, bet. Poplar and Liberty	16	.....
8th, bet. Reed and Wayne	194	.....
8th, " " "	22 10	.....	.....
9th, east of East Ave	50 4	.....	.....	.....
9th, bet. Cherry and Poplar	359 6	.....
9th, intersection 9th and Rasp.	39	.....
11th, bet. Liberty and Plum	308	.....
12th, east of Liberty	13 10	.....	.....
12th, cor. Sassafras	26	180 10	.....
13th, east from French	135	.....
14th, bet. State and French	200	.....
14th, bet. French and Holland	280	.....	.....
14th, west of Reed	7 4	{ 125 ⁸ ft 1 in abandoned.
18th, west of Cranberry	102 5	1084	.....
19th, east of French	156	.....	.....
19th, west of Walnut	9 2	.....	.....
20th, west of Peach	9 9	{ 694 ft 6 in taken out.
21st, east of Cascade	9	329	.....
21st, east and west of Raspb'y	486	.....
22d, west of Plum	329	.....
23d, west of Cherry	170	.....
23d, east from Warfel Ave.	109	.....
24th, east of Reed	133	.....
24th, west of Liberty	9 6	.....	.....
26th, east and west	815	226	1488 7	
Warfel Ave. north of 23d	105	.....
East Ave. bet. 14th and 15th	100	341	{ 203 ⁴ ft ¾ in abandoned.
Ross, bet. 4th and 5th	75 6	.....
Wayne, bet 10th-11th, 11th-12th	414 4	.....
Reed, bet. 10th-11th, 7th-8th, 6th-7th	476	.....
Ash, north of 3d	469	{ 251 ft 1 in abandoned.
Wallace, bet. 7th and 8th	390	.....
Parade, bet. 4th-5th, 2d-3d	72	262	.....
Holland, bet. 10th and 11th	340	.....
German, bet. 6th-7th, 2d-Front	25 6	168	{ 251 ft 1 in abandoned.
French, bet 19th-21st, 25th-26th	709 6	.....
State	56 6	.....	66	1711 4	.....
Myrtle, bet 25th-26th, 11th-12th	418	.....
Cherry, bet. 20th-22d, 5th-6th, 2d-3d	167 7	974 9	
Poplar, intersection of 8th	40 8	.....
Liberty	5	781 3	

Main Pipes Laid in 1894—Continued.

LOCATION.	SIZES.					REMARKS.
	1 ¹ / ₂ in.	2 inch.	4 inch.	6 inch.	12 inch.	
	ft. in.	ft. in.	ft. in.	ft. in.	ft. in.	
Plum, bet. 14th-16th, int. 8th..	12 4	329 1	.....
Cascade, bet. 3d-4th, int. 8th..	228	67	.....
Raspberry, bet. 6th-8th, 15th-18th, 9th-10th	2329	.....
Scott, east of Myrtle.....	6 4	.....	.....
Hess Ave., north of 12th.....	7	.....	.....
Brewster, bet. 11th and 12th...	7 7	290	.....
Railroad, north from 26th.....	89	.....	.....
Total.....	56 6	431 10	3456 7	15865 9	1488 7	

MAIN PIPES.

SUMMARY.

Size.			
1 ¹ / ₂ inch.....	.....	56 6	
2 " .....	.....	431 10	
4 " .....	.....	3,456 7	
6 " .....	.....	15,865 9	
12 " .....	.....	1,488 7	21,299 3 feet.

LESS PIPE REMOVED.

¾ inch.....	.....	697 10	
1 " .....	.....	376 8	
6 " .....	.....	694	1,768 6 feet.

Total.....19,530 9 feet.

Or 3 miles, 3,690 9 feet.

Amount laid to January 1, 1894.....85 miles, 1,788 feet, 8 inches.

Total, December 31, 1894.....89 miles, 199 feet, 5 inches.

Connections Made in 1894.

Size.		
$\frac{3}{4}$ inch	.....	399
1 "	.....	10
$1\frac{1}{4}$ "	.....	1
$1\frac{1}{2}$ "	.....	5
2 "	.....	11
4 "	.....	6
6 "	.....	3
		<hr/>
		435

LESS REMOVED.

$\frac{3}{4}$ inch	.....	7
$1\frac{1}{2}$ "	.....	1
		<hr/>
		8
		<hr/>
		427

	8,398	feet.
	<hr/>	
	Or 1 mile, 3,118	feet.
Previously reported to January 1, 1894	.....33 miles, 1,642 $\frac{1}{2}$	feet.
	<hr/>	
Total, December 31, 1894	.....34 miles, 4,760 $\frac{1}{2}$	feet.

N. B.— In addition about 80 connections were renewed, in streets to be paved, and others which had given out.

Second	street.....	1
Fourth	"	2
Eighth	"	5
Eleventh	"	10
Thirteenth	"	1
Nineteenth	"	1
Parade	"	2
Holland	"	2
French	"	7
State	"	20
Peach	"	1
Sassafras	"	2
Chestnut	"	26
		<hr/>
Total.....		80

Stop Valves Set, 1894.

STREET.	LOCATION.		Size.	Style.	Remarks.
Second.....	East	line of Cascade.....	4	Eddy.	
Third.....	"	Liberty.....	4	"	
Fifth.....	"	Raspberry...	2	"	
".....	"	Poplar.....	6	"	
Sixth.....	West	Reed.....	6	"	
Seventh.....	East	Raspberry...	6	"	} Place of old one.
Eighth.....	"	State.....	4	"	
".....	West	Wallace.....	6	"	} Place of old one.
Tenth.....	"	Peach.....	6	"	
Eleventh.....	East	Holland.....	4	"	
Fourteenth.....	West	French.....	6	"	
Sixteenth.....	"	German.....	6	"	
Eighteenth.....	"	Cranberry...	6	"	
".....	930 ft. W.	".....	6	"	
Twenty-first.....	West	Raspberry...	6	"	
Twenty-second.....	"	Plum.....	6	"	
Twenty-third.....	East	Poplar.....	6	"	
Twenty-sixth.....	"	German.....	12	"	} 6 in. re- moved.
".....	"	Parade.....	12	"	
".....	West	Brown Ave....	4	"	
Brewster.....	South	Eleventh.....	6	"	
East Ave.....	"	Twelfth.....	6	"	
Wayne.....	"	Tenth.....	6	"	
Wallace.....	"	Tenth.....	4	"	} Place of Ludlow.
Parade.....	North	Fifth.....	6	"	
German.....	South	Fifteenth.....	6	"	
Holland.....	North	Twelfth.....	4	"	} Place of Ludlow.
French.....	"	Twenty-sixth..	6	"	
State.....	South	Second.....	6	"	
".....	North	N. Park Row..	6	"	
".....	"	Fourth.....	6	"	
".....	South	Fifth.....	6	"	
".....	North	Third.....	4	"	
Myrtle.....	"	Twenty-sixth..	6	"	
".....	South	Sixteenth.....	4	"	
Chestnut.....	North	Tenth.....	4	"	} Place of Ludlow.
Walnut.....	"	Eighth.....	4	"	
Cherry.....	South	Twenty-first..	6	"	
Liberty.....	North	Sixth.....	6	"	
Raspberry.....	"	Twelfth.....	6	"	
".....	South	Sixth.....	6	"	
".....	North	Eighth.....	6	"	
".....	South	Ninth.....	6	"	
".....	North	Fifteenth.....	6	"	
".....	"	Eighteenth...	6	"	

Stop Valves Set in 1894.
SUMMARY.

Size— 2 inch.....	I
4 ".....	II
6 ".....	30
12 ".....	2
Total increase.....	44

Fire Hydrants Placed in 1894.

STREET.	LOCATION.	NAME.
Second.....	167 ft. W of Plum.....	Matthews
Fourth.....	N W cor. Myrtle [in place of old Pittsburg]..	"
Fifth.....	N E " Cherry [in place of o.s. Matthews]..	"
".....	272 ft. E of Reed.....	"
".....	N W cor. Poplar.....	"
Seventh.....	200 ft. W of Poplar.....	"
".....	N E cor. Reed [in place of Bay State].....	"
Eighth.....	N W " Plum.....	"
".....	N W " Raspberry.....	"
".....	N W " Cascade.....	"
Eleventh.....	N W " Wayne [in place of Bay State].....	"
".....	N E " Perry [in place of Bay State].....	"
Twelfth.....	N E " Liberty.....	"
Fourteenth.....	N W " Reed.....	"
Seventeenth.....	N W " Cherry [in place of old Pittsburg]..	"
Eighteenth.....	N W " Cranberry.....	"
".....	611 ft. W of Cranberry.....	"
Nineteenth.....	N W cor. Walnut.....	"
Twentieth.....	N W " Peach.....	"
Twenty-first.....	N E " German.....	"
".....	171 ft. W of Raspberry.....	O. Pittsb'g
Twenty-second.....	272 ft. W of Reed.....	Bay State
Twenty-fourth.....	147 ft. W of Liberty.....	O. Pittsb'g
Twenty-sixth.....	N E cor. German.....	Matthews
".....	1233 ft. W of City line.....	"
Hess Ave.....	N E cor. Twelfth.....	"
Ash.....	S E " Twenty-fifth [in place of Bay State]	"
German.....	S E " Front.....	"
State.....	N E " Nineteenth.....	"
".....	316 ft. S of Twelfth.....	"
".....	S W cor. Twelfth.....	"
".....	S W " Fifth.....	"
".....	N E " Fourth [in place of Ludlow].....	"
".....	S W " Second.....	"
Peach.....	S W " Twelfth [in place of old one].....	"
".....	45 ft. S of Thirteenth [in place of old one]..	"
Chestnut.....	N E cor. Tenth [in place of West Jersey]....	"
Cherry.....	S E " Second.....	"
Poplar.....	N E " Tenth [in place of old Pittsburg]..	"
Liberty.....	395 ft. S of Twenty-sixth.....	Old Matthews
Plum.....	116 ft. N of Sixteenth.....	Old Bay State
Scott.....	13 ft. E of Myrtle.....	Matthews
Brewster.....	S E cor. Eleventh.....	"

Fire Hydrants Placed in 1894.

SUMMARY.

Matthews (new)	38
" (old)	1
Bay State	2
Pittsburg (old)	2
	—43

HYDRANTS REMOVED.

Pittsburg (old)	3
Matthews	4
Bay State	4
Ludlow	1
West Jersey	1
	—13
	30

PRIVATE HYDRANTS PLACED 1894.

Pennsylvania Soldiers' and Sailors' Home	1
Erie City Iron Works	2
Erie Chemical Co	2
	—5
Total increase	35
Number in use December 31, 1893	444
	—
Total in use December 31, 1894,	479

Tees Placed in 1894.

SIZE.	
2 x 3/4	4
4 x 4	5
6 x 4	23
6 x 6	4
12 x 12	2
	—38
Less one 6 x 6 removed	1
	—
Total increase	37

Crosses Placed in 1894.

SIZE.	
4 x 4	2
6 x 4	4
6 x 6	10
12 x 12	2
	—18
Less 1 4 x 4	
" 4 6 x 4	
" 1 6 x 6	
Removed	6
	—
Total increase	12

ENGINEER'S REPORT ON INTAKE PIPE EXTENSION.

To the Honorable Commissioners of Water Works, Erie, Penn'a:

GENTLEMEN—In accordance with your request I visited Erie on January 22d, to examine the plans prepared by Mr. W. C. Brough, engineer for the extension of the conduit across the harbor, through the peninsula and into the open waters of Lake Erie. Mr. Brough arrived on the following day and kindly furnished me with all the information at his command.

It is unnecessary to state that the present intake is quite objectionable. It is located in the harbor and exposed to the pollution from sewage and other deleterious matter which can reach it from the city and from the shipping. The chemical analysis of this water, published in your Report for the year ending December 31, 1892, confirm the existence of danger to the health of the community by a continuation of the use of the water from the harbor.

There are but two possible sources from which the city may be supplied with suitable water in the future. One source is found in streams to the south of the city and the other is Lake Erie. Experience along the lakes has proven that the lake water is excellent in quality, and, of course, at all times sufficient in quantity. The small streams furnish an insufficient quantity unless artificial storage reservoirs are built to retain the excessive flow during the spring months; and the quality of the water has generally been found inferior to that of the lake. As the expense of obtaining the desired quantity of water from the lake is less, I fully concur in Mr. Brough's decision to utilize this source for all future extensions of your supply.

There are several points in the lake—notably two—from which the water may be drawn. One is off the Head, and the other opposite the city. Mr. Brough has investigated both of these and has made profiles for the pipe lines. He has rejected the former on the grounds of expense and uncertainty in preserving a permanent intake.

My examinations confirm this conclusion. The total length of the pipe line would be about 25,200 feet, and the estimated cost about \$621,000. The intake would be located in an open bay, with a present tendency to deposit sand as well as to collect drift. There is only about twenty-five feet of water 7,000 feet

from shore, and considerable rock excavation for the pipe line along the shore.

There have been other suggestions to obtain lake water from the Head and to make a cut through the Peninsula, with the expectation of improving the quality of the water in the harbor. But none of them take account of the causes of lake fluctuations, or of the tendency of the sand and drift to move along the shore in the direction of the longest "wave fetch." No current of permanent direction can be obtained in the harbor, nor could a channel at the Head be kept open without considerable and constant expense.

The only practicable and least expensive lines are directly across the harbor and out into the lake. Mr. Brough has made soundings and estimates for several of such lines, of which the best one is designated upon the plans as the "D" line. With the same cost it reaches deeper water than the others, and crosses the Peninsula at a better location with regard to future filtration works.

The total length of conduit, as proposed by Mr. Brough, is 16,060 feet, of which 10,860 feet consist of five-foot pipe running across the harbor, and 5,200 feet consist of five and a half foot pipe: of which, again, 1,700 feet are situated on the Peninsula and 3,500 feet in the lake. The extreme end or intake is 34 feet below the government datum of water level of Lake Erie, or zero level. The estimate of cost, according to Mr. Brough, is about \$271,000.

I can see no objections to any of the general features of this plan, and, if properly executed, I believe it will give you a water supply abundant in quantity and excellent in quality.

Regarding the details of this work, some of which have already received Mr. Brough's attention, I have the following suggestions to make:

THE INTAKE.

The first intakes built in the Great Lakes, as at Chicago and Cleveland, were placed in large cribs brought up to above the water surface and provided with light houses, keepers' residences, etc. The city of Toronto, after more than twelve years' experience, has demonstrated, however, that the intake can be submerged, which makes the structure and its maintenance much less expensive. It also makes it less liable to have its ports obstructed by moving fields of ice. A submerged crib is, in my opinion, to be preferred in your case.

To obviate the entrance of floating matter, or the clogging up of screens by slush ice, it is desirable to make the opening so large that the velocity of the water drawn in does not exceed three or four inches per second at any point. The area of opening should not be less than three hundred square feet, exclusive of

the area of the grate bars. These latter are better made of wood than of iron, as slush ice is less liable to adhere to them. As the depth of water is thirty-four feet, and as there should be at least twenty-four feet of water above the intake, the crib in which it is placed, together with the grate bars, should not be more than ten feet above the bottom. In order to determine the proper depth, observations should be made regarding the depth of pack ice, several thousand feet out from the shore of the Peninsula.

The level of the conduit at the pumping station is fixed. The center of the cylinders of the new pumps is 15.5 feet above the lake level, and the bottom of the suction pipe is 8.5 feet below the same, making the greatest lift twenty-four feet. With the given size of the conduit and a given quantity of water to be delivered, we can therefore determine how far out in the lake the intake can be placed. To be most serviceable, I find that it is not advisable to go much further than 3,500 feet from the shore of the Peninsula; to go further would diminish the hydraulic gradient, and therefore the delivery of the pipe.

In making the frame-work of the intake crib, I consider it better to fasten the timbers together by means of drift bolts, suitably placed, rather than by dove-tailing them. The present plans and specifications should be revised to conform to a larger size of opening and other details arising therefrom.

CLARIFICATION OF LAKE WATER.

With the present position of the new pumps, it is not expedient to take the water at so great a distance from the shore that it would never be roily after storms. It is my opinion, further, that after the inhabitants of Erie have had comparatively clear, though less wholesome water from the harbor, they would not be satisfied with roily water, albeit from a pure source. Therefore no extension of the conduit into the lake should be undertaken without first considering suitable arrangements for clarifying the water. These will be comparatively inexpensive, as suitable territory and material for the purpose exist on the Peninsula, and I urgently recommend the consideration of such a project. Without certain information, not yet available, it is doubtful what method should be adopted. For the purpose of obtaining this information you should have a record of the number of days in a year and how far out in the lake the water is usually roily. After the water has been much disturbed, samples should be taken at different distances out, both at the surface and near the bottom of the lake. These should be compared as to color,* and an analysis made of the character and quantity of the suspended material. The nature of the sand on the Peninsula at several points, as regards cleanliness and fineness, should also be

*FOOT NOTE.—See article by Desmond Fitzgerald and William E. Foss in the Journal of the Franklin Institute, for December, 1894.

determined, according to the standard of the Massachusetts State Board of Health. With such data it is then practicable to state whether the clarification can be obtained by simple sedimentation, or whether filtration should be adopted to render the water clear as well as pure at all times. I see no objectionable or expensive feature in either process, in winter or in summer, if suitable arrangements are provided. A sufficient area of land should also be acquired from the United States government for the clarification works.

In order to operate any system of clarification, the water will require to be lifted at the Peninsula, but as the lift will be small, centrifugal pumps answer for the purpose. The annual cost of pumping and clarifying the water will probably be from \$3,000 to \$5,000, according to the character of the water and the number of days when pumping and clarification will be required.

CONDUIT PIPE.

The sizes as suggested by Mr. Brough are sufficiently large to supply the city for a very long time. The pipe can deliver at the pumps over 30,000,000 U. S. gallons daily from the proposed intake. From the peninsula to the pumps the pipe is to be five feet diameter; in the lake five and one-half feet diameter. I think it is well to have this suggested increase in size as it will be of service in rapidly filling the basins on the peninsula, when the water is to be clarified. Mr. Brough has recommended the pipe to be made of steel plate, with riveted joints. The opinions regarding steel pipe are not yet unanimous, but the tendency is growing in favor of its preference over cast iron.* The objection that it is light and might rise to the surface if empty does not apply in this case, as the pipe lies too low to be emptied by the existing pumping machinery. Nor is it practicable in any case to empty the pipe without having a second one to supply the city. At such a time special means can be applied to examine and repair it without disturbing its equilibrium.

The principal objection to the use of steel is that sufficient experience is lacking regarding its durability. It is true that the use of steel pipe is recent. The oldest case I can remember is a double line of such pipe across the bay of San Francisco, belonging to the Spring Valley Water Company. It has now been in use about ten years, and nothing but good news has been heard regarding it. It is laid in salt water and has three heavy coats of asphaltum. The steel pipe laid at Toronto across the harbor has been in use only about three years, but recent examinations have shown that the material has not deteriorated.

*FOOT NOTE.—A good article on this subject which I can recommend reading appeared in the Engineering Record of May 9, 1891, being a paper by D. J. Russell Finckan, read before the annual convention of the American Water Works Association, April, 1891.

Corrosion of such pipe is probably due to galvanic action caused by contact of two materials holding different positions in the electric scale in the presence of a very weak acid. For instance, a freshly broken surface of a poor quality of cast iron contains much combined carbon and in a damp place will rust quite rapidly. The contact of iron and carbon in the presence of the carbonic acid of moist air causes a galvanic current by which the iron is oxidized. Experiments made by Thomas Andrews in Edinburgh have conclusively shown that good wrought iron and steel resist destruction by rust better than average cast iron. In other words, the more homogeneous the metal and the less the quantity of uncombined carbon the greater is the resistance to corrosion. The common observation that cast iron pipes are more durable than wrought iron is explained by the natural formation of magnetic oxide at the surface of the former during the process of casting, thereby giving a natural protection against the destructive action. While good steel, homogeneous in its composition, naturally resists corrosion better than the ordinary cast iron unprotected by magnetic oxide, a protective artificial coating of the steel should preserve it fully as well.

As the cost of the steel pipe and of laying it will be less than in the case of cast iron, I therefore see no reason why it should not be preferred. The pipes should be well coated with at least two coats inside and out of some good, protective material, the principal ingredient being natural asphalt.*

The conduit lately laid in Lake Michigan to the water intake for Milwaukee is of cast iron. Mr. Benzenberg, city engineer, preferred the same, because he did not consider the data sufficient to convince him that cast iron, properly coated, would not be more durable than steel, even though the expense is greater.

In view of all the facts before me, I believe you are justified in adhering to the proposition to use steel pipes, but I suggest that the specifications for their coating be improved to conform with the most recent practice.

Another important item in the proposed conduit pertains to the joints. It is proposed to manufacture the pipe in lengths of about eighty feet, and to unite these sections with fixed, and occasionally with flexible joints in accordance with the directions of the engineer. I see no reason why such an arrangement is not a proper one, but I believe the joints proposed may be somewhat improved.

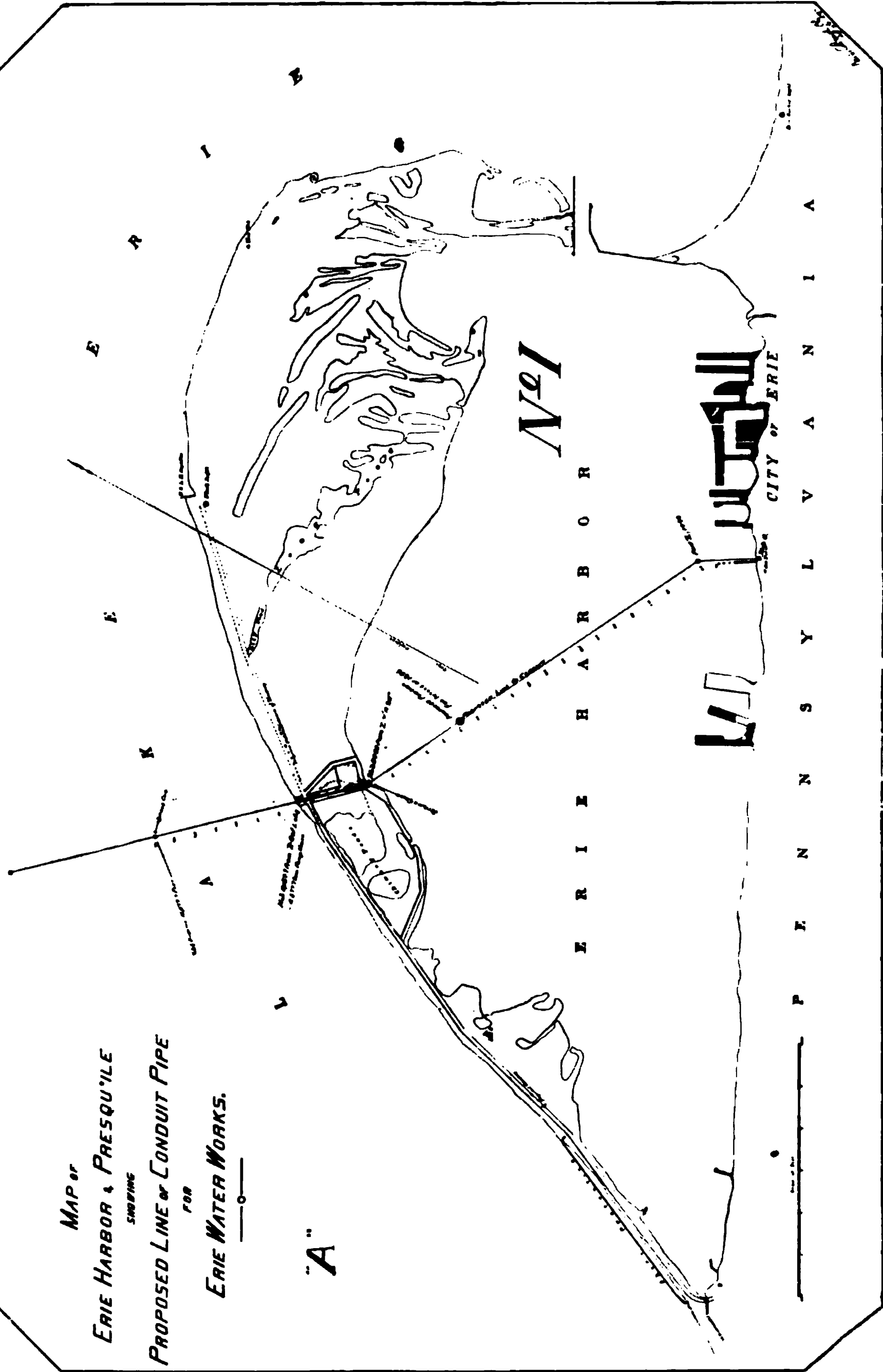
First, regarding the fixed joint, I cannot consider that the

*FOOT NOTE.—Reference may be here made to the method of coating used by Clemens Herschel, M. Am. Soc. C. E., for the steel pipe of the East Jersey Water Company, supplying Newark, N. J., etc., a description of which may be found in the Engineering Record of Sept. 26, 1891, p. 264. The method of cleaning the pipes preparatory to coating is minutely described by Emil Kulchling, M. Am. Soc. C. E., in his specifications for the new steel conduit from Hemlock Lake, for the city of Rochester, N. Y.—Eng. Rec., Dec. 24, 1892, p. 74.

MAP of
 ERIE HARBOR & PRESQU'ILE
 SHOWING
 PROPOSED LINE of CONDUIT PIPE
 FOR
 ERIE WATER WORKS.

— 0 —

"A"



No 1

ERIE HARBOR

CITY OF ERIE

P E N N S Y L V A N I A

proposed gasket packing will be permanent and water tight. It must be made under water and the difficulty of tightening so many bolts, and particularly beneath the pipe, seems to me considerable. I think that the joint used by Mr. Benzenberg in Milwaukee would be more likely to secure water tightness. The latter is designed for cast iron pipe, but can equally well be adapted to steel pipe. It has a lead joint similar to that used in laying water mains, excepting that the lead is run upon the spigot end and then inserted into the hub under water. The spigot is then forced into position by means of clamps and screw bolts in such a manner that it spreads the lead out into a groove and also overlaps the inner edge of the hub or faucet.

The flexible joint proposed is the one formerly used in Toronto. Regarding the same Mr. Keating, city engineer, writes as follows: "It is a capital joint, but still open to some objections. Owing to the shortness of the zone or ball the versed sine of the curve is so small that there is practically very little hold on the pipe on each side, and one of our joints did pull out when the pipe rose to the surface. There is also the objection that the lead filling is liable, on account of its softness, to be crushed on the lower side of the joint by reason of the weight of the joint, which naturally leaves a slight opening on the upper side of the joint through which leakage would be apt to occur, and I believe that some of our leakage in the pipes across the harbor is due to this cause. A good many of these joints have been gone over carefully by divers and re-caulked with sheet lead." To obviate these objections a new joint has been used on the six-foot extension into the lake. I agree with Mr. Keating that it possesses some advantages over the old joint, and would advise you to substitute it for the other.

You are already familiar with the flexible joint used by Mr. Hill at Syracuse, N. Y., drawings of which are in your office.

Inasmuch as a future examination of the conduit is beset with difficulties, I would recommend to you to take all possible precautions and make the specifications and inspection most rigid, in order to get both durable and water tight pipes and joints, and in addition to insist upon an effective test of the completed conduit. By tightly closing the intake end and lowering the water at the pump end you can ascertain whether there is leakage and its rate by measuring the rise of the water in the well and the time of filling.

MISCELLANEOUS MATTERS.

Owing to lack of funds to complete the entire work it is proposed to place a temporary intake in the harbor at Big Bend. The water at this point will no doubt be better than at the present intake, but still it will not be safe against dangerous, though invisible, pollution by disease germs entering the harbor from the city. As a temporary expedient, however, I see no objection to

it. To protect it a crib should be placed at the end of the pipe and be provided with strainers similar to the intake crib as required in the lake.

The settling crib, as proposed by Mr. Brough, will act merely to keep gravel or the like from entering the pipe. I do not think it necessary in addition to the temporary crib, in which provision for the retention of the heavy matter can be made, and its purpose is obviated in the permanent project by the introduction of more extensive arrangements yet to be designed for clarifying the water before it is delivered to the citizens.

I have examined the specifications with reference to the engineering requirements of the case and suggest that they be amended where necessary in conformity with the above statements. There are a number of other clauses which have largely a legal character or pertain to executive duties which can be best reviewed by your city solicitor, your engineer in charge of the execution and yourselves.

In conclusion, I desire to state that notwithstanding the temporary removal of the intake to the opposite side of the harbor, or even the removal to beyond the peninsula, this should not furnish an argument against building an intercepting sewer to carry the ordinary flow of the sewers to a point where the sewage will be kept out of the harbor and properly disposed of. Its discharge along the city front will be a constantly increasing nuisance, prejudicial to health by polluting the surrounding atmosphere, if not directly the water supply as it does at present. With the water supply taken from the lake, artificially clarified when roily, and the sewage prevented from fouling the harbor, the health rate of your city must be greatly and permanently improved.

Very respectfully,

RUDOLPH HERING.

NEW YORK, February 12, 1895.

ANNUAL REPORT

OF THE

COMMISSIONERS

OF

WATER WORKS,

IN THE

CITY OF ERIE,

TO THE

MAYOR AND COUNCILS.

C

FOR THE

YEAR ENDING, DECEMBER 31, 1895.

ERIE, PA.:

HERALD PRINT. & PUB. CO.,

1896.

NEW YORK
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WATER AND
SEWERAGE

ANNUAL REPORT

OF THE

COMMISSIONERS

OF

WATER WORKS

Compliments of . . .

WILLIAM HIMROD,

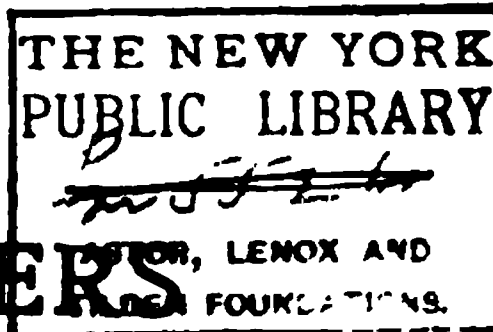
SECRETARY AND TREASURER

of American Water Works Association.

MAYOR AND COUNCILS.

FOR THE

YEAR ENDING, DECEMBER 31, 1895.



ERIE, PA.:
HERALD PRINT. & PUB. CO.,
1896.

1. The first part of the document is a list of names and addresses. The names are written in a cursive hand, and the addresses are written in a printed hand. The list is organized in two columns, with names on the left and addresses on the right. The names are: John Smith, James Brown, William Jones, and Thomas White. The addresses are: 123 Main Street, New York, NY; 456 Elm Street, New York, NY; 789 Oak Street, New York, NY; and 1010 Pine Street, New York, NY.

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ANNUAL REPORT

OF THE

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WATER WORKS,

IN THE

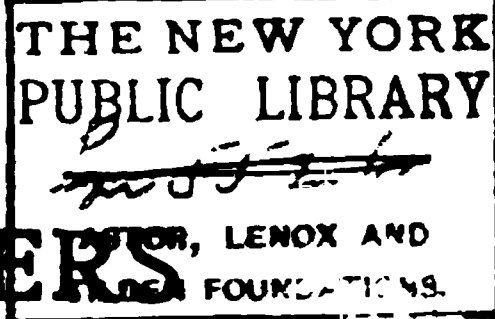
CITY OF ERIE,

TO THE

MAYOR AND COUNCILS.

FOR THE

YEAR ENDING, DECEMBER 31, 1895.



ERIE, PA.:
HERALD PRINT. & PUB. CO.,
1896.

COMMISSIONERS OF WATER WORKS, IN THE CITY
OF ERIE, FROM ORGANIZATION TO DEC. 31, 1895.

The Commissioners of Water Works, in the City of Erie, are appointed by the Court of Common Pleas of Erie County, Pa., for a term of three years, one member being named annually, in May.

1867	*Wm. L. Scott,	Henry Rawle,	Wm. W. Reed,
1868	*John C. Selden,	Henry Rawle,	Wm. W. Reed,
1869	*John C. Selden,	Henry Rawle,	Wm. W. Reed,
1870	*John C. Selden,	Henry Rawle,	Wm. W. Reed,
1871	*†John C. Selden,	Henry Rawle,	Wm. W. Reed,
1872	Matthew R. Barr,	John Gensheimer,	Wm. W. Reed,
1873	Matthew R. Barr,	John Gensheimer,	Wm. W. Reed,
1874	Matthew R. Barr,	John Gensheimer,	Wm. W. Reed,
1875	Matthew R. Barr,	John Gensheimer,	Wm. W. Reed,
1876	Matthew R. Barr,	John Gensheimer,	Wm. W. Reed,
1877	M. Liebel,	John Gensheimer,	Wm. W. Reed,
1878	M. Liebel,	*J. M. Bryant,	Wm. W. Reed,
1879	M. Liebel,	*J. M. Bryant,	*G. W. F. Sherwin,
1880	M. Liebel,	*J. M. Bryant,	*G. W. F. Sherwin,
1881	M. Liebel,	Benjamin Whitman,	*G. W. F. Sherwin,
1882	M. Liebel,	Benjamin Whitman,	*G. W. F. Sherwin,
1883	M. Liebel,	Benjamin Whitman,	*G. W. F. Sherwin,
1884	M. Liebel,	Benjamin Whitman,	*G. W. F. Sherwin,
1885	M. Liebel,	Benjamin Whitman,	Geo. W. Starr,
1886	C. Kessler,	Benjamin Whitman,	Geo. W. Starr,
1887	C. Kessler,	C. J. Brown,	Geo. W. Starr,
1888	C. Kessler,	C. J. Brown,	Geo. W. Starr,
1889	C. Kessler,	C. J. Brown,	Geo. W. Starr,
1890	C. Kessler,	C. J. Brown,	Geo. W. Starr,
1891	C. Kessler,	C. J. Brown,	Wm. Hardwick,
1892	T. W. Shacklett,	C. J. Brown,	Wm. Hardwick,
1893	T. W. Shacklett,	C. J. Brown,	Wm. Hardwick,
1894	T. W. Shacklett,	C. J. Brown,	Wm. Hardwick,
1895	T. W. Shacklett,	C. J. Brown,	Wm. Hardwick.

* Dead.
† Mr. Selden resigned before the expiration of his second term ; Mr. Barr was substituted by the other Commissioners, and afterwards appointed by the Court.
NOTE.—C. J. Brown resigned December 28, 1895, having been elected Treasurer of Erie County, Pa. Clark Olds was chosen by the other Commissioners, for the unexpired term, on recommendation of the Court, January 2, 1896.

THE PRESENT COMMISSIONERS.
(January 2, 1896.)

WM. HARDWICK, President.
T. W. SHACKLETT. CLARK OLDS.

OFFICE—City Hall.
OFFICE HOURS—From 8:00 A. M. to 5:00 P. M.; on Mondays to 9 P. M.
REGULAR MEETINGS OF THE COMMISSIONERS—Every Saturday at 3:00 P. M., and the first of each month at 11:00 A. M., except when it occurs on Sunday, then they meet the following day, and every Monday at 7:30 P. M.

OFFICERS AND SALARIES PAID THEM IN 1895.

Commissioners—Wm. Hardwick.....	\$ 900 00
C. J. Brown.....	900 00
T. W. Shacklett.....	900 00
Secretary and Treasurer—Wm. Himrod.....	2,000 00
Assistant Secretary—Geo. C. Gensheimer.	1,440 00
Book-Keepers—John Kolb.....	1,080 00
R. H. Bear.....	960 00
W. W. Todd.....	840 00
Clerk—M. L. Whitley.....	660 00
Inspectors—John D. Spafford.....	815 00
Wm. McCleery.....	780 00
P. F. Weinheimer.....	780 00
Meter Taker—Perry E. Thurber.....	780 00
Superintendent of Street Work—R. T. Walker.....	1,320 00
Foremen of Street Work—Fred Simons, per day.....	2 50
Fred D. Gross, per day.....	2 50
Chief Engineer—F. A. Roth.....	1,320 00
Assistant Engineers—Geo. R. Miller.....	960 00
John Kelly.....	960 00
Firemen—Joseph Burns.....	660 00
Jacob Mullen....	660 00
Henry F. Voltz (3 months).....	165 00
Watchman at Pumping Station—Michael Flynn.....	660 00
Janitor at Pumping Station—Nathan Block.....	600 00
Keeper of Reservoir—Samuel Phister.....	480 00
Janitress—Mrs. Matilda Sager.....	168 00

ANNUAL REPORT.

To the Mayor, Select and Common Councils of the City of Erie, Pa.:

GENTLEMEN:—The Commissioners of Water Works, in the City of Erie, take pleasure in reporting that the business of the year 1895 has been very satisfactory to them, and trust it will be equally so to yourselves and to our fellow citizens.

The balance of cash to our credit in the hands of the Treasurer of the City of Erie, January 1, 1895, was \$18,887.00.

Receipts for water during the year just closed were from the following accounts:

Assessed.....	\$91,937.83	
Meter.....	23,749.47	
Special.	257.31	
Building.....	983.02	\$116,927.63

Receipts from plumbing were \$1,878.12, making total cash for the year \$137,692.75.

The increase of receipts for water from the four divisions of accounts are as follows:

Assessed.....	\$4,491.15	
Meter.....	409.78	
Special.....	24.76	
Building.....	180.00	\$5,105.69

Assessed Accounts are based on the stores, offices, shops, dwellings, fixtures, etc., on property where water is introduced, which are determined annually by a thorough inspection of the same. Work in this line begins about the first of May by house to house inspection, which is conducted as rapidly as possible without sacrificing thoroughness and accuracy, and is completed by the first of

the following December. This field work shows at a glance the date of inspection, name of Inspector, location of the property, frontage and names of the owner and occupant, also the purpose for which the property is used. It also shows the location and kind of fixtures used, stating the assessed rates for each and giving the annual and quarterly revenue derived, together with its account number. Last January we inaugurated the system of furnishing all property owners using city water with a tabulated statement of the amount each piece of property was assessed for. This "Assessment Notice" is compiled from the work of the Inspector, and shows the interested party the "assessed rates," also the basis upon which the quarterly charges are made, which must be paid during the first month of each quarter.

We are pleased to state that this system has given the patrons of the Water Works universal satisfaction. This work, of house to house inspection, is the foundation of the assessment for the year, and when the work is tabulated we are enabled to see at a glance the revenue derived from each assessable item, and the amount each ward in the city yields, also the amounts received from the entire city. In our report for the year 1894 we exhibited on pages 20 and 21 a tabulated statement of the "Assessments for 1895," which explains the system better than we can describe in words.

Meter Accounts are based on the quarterly consumption of water by meter measurement, at the uniform rate of six (6) cents per one thousand (1,000) gallons, *provided* that the consumption does not fall below the minimum charge for the size of meter used. All meters are examined and read every thirty days, but accounts are only rendered quarterly. The consumption of water by meter for the quarter ending December 31, 1895, was greater than ever before in the history of the Water Works.

Special Accounts are based on the consumption of water by assessment against parties not provided with water fixtures on their property, and who obtain their supply from accommodating neighbors having the city water. In all cases of this kind the party desiring the water must pay for it in advance, obtaining a written permission to secure it from a consenting party, but only

for the time specified in said "*Special Permit.*" Any person furnishing water to others, without authority, makes himself liable to a fine or to be deprived of water himself.

Building Accounts are based upon the quantity of lime used in repairing and constructing buildings, etc. The owner or agent of the proposed improvement is required to procure a "*Building Permit,*" paying for the same before he begins the work.

EXPENDITURES.

The disbursements amount to \$132,771.30, distributed among the several departments as follows :

Construction.....	\$97,007.71	
Maintenance.....	10,019.48	
Operating	17,564.78	
Accounting.....	8,079.33	
Legal.....	100.00	\$132,771.30

The largest item in the Construction Department being the amount expended on Intake No. 2 ; then in order comes the extension of mains, making of connections, building dock, filling water lots, new stop valves, meters, etc.

March 28, 1895, Hon. Walter Scott, Mayor of the City, approved the ordinance conveying to the Commissioners of Water Works, in the City of Erie, five (5) water lots, Nos. 131, 132, 133, 134 and 135, and on Tuesday, April 9, 1895, the City of Erie by its Mayor, completed the transfer by deeding the property for water works purposes. The deed is recorded in the office of the Recorder of Deeds in and for Erie County in Deed Book No. 114, page 469. These lots add 165 feet to the frontage of the pumping plant, and improvements amounting to \$4,581.08 have already been made on the same. These improvements consist of piers and filling, and when completed, as designed, will make a valuable addition to the property at the harbor.

Extensions of mains were not as extensive as in the previous year, being but 18,004 feet of all sized pipe, making the total length of mains 92 miles 2,787 3-12 feet.

Connections of all sizes have been made where required, either on application of property owners or in compliance with the law where streets are to be paved. Large connections to manufacturing plants have been given for fire protection, and every facility in this line extended to the industries of the city.

Engine No. 1, (which is the west one of the two that were put in when the Water Works were constructed,) was disabled last winter and has not been repaired, because the cost of repairs would exceed the present value of this type of pumping engine.

INTAKE NO. 2.

As stated in our last report, we began work this year on the new intake (designated and known as Intake No. 2), which, if found necessary, is planned to go across the harbor, through the Peninsula and out into the open water of Lake Erie. After careful consideration, including a conference with the boiler manufacturers of our city, we decided to use cast iron pipe, and to extend it to a point in "Big Bend" 8,200 feet from Engine House No. 3, which is about 2,600 feet south of the south shore of the Peninsula, in 21 feet of water, with $13\frac{1}{2}$ feet of water over the crib where the water enters the intake.

We engaged Walter C. Brough, C. E., to take charge of the construction of the work, he having made the preliminary survey.

Plans and specifications for the pipe and specials required that each piece of pipe should be twelve (12) feet five (5) inches long over all, including bell and spigot, sixty (60) inches interior diameter, and one and five-sixteenth ($1\frac{5}{16}$) inches thick, to weigh approximately ten thousand three hundred (10,300) pounds after being coated; a variation from the approximate weight of three (3) per cent being allowed. All weight in excess was not to be paid for, and when the piece weighed less the same to be rejected. Each piece to be subjected to a water pressure of two hundred (200) pounds to the square inch, and while under said pressure to be well and thoroughly hammered. The pipes were to be delivered sound and in good order at the pumping station in Erie, Pa. Payments to be made in four equal payments, three (3), six (6), nine (9) and twelve (12) months respectively from the average

SIXTY-INCH VALVE IN PLACE.

date of delivery, with interest at the rate of six (6) per cent. per annum after three (3) months from said average date, with the right of anticipating the whole or any part of any payment, and in such case interest to cease on amounts so paid.

The approximate weight of the pipe required was three thousand and five hundred and twenty-three (3,523) tons of two thousand (2,000) pounds each.

On Thursday, April 18, 1895, bids for furnishing the pipe and specials in accordance with the plans and specifications were received, and the contract awarded to the Addyston Pipe and Steel Company, of Cincinnati, Ohio, at \$18.00 per net ton, they being the lowest bidders.

Each bid was accompanied with a certificate of deposit in our favor, issued by a bank in our city, for the sum of one thousand (\$1,000.00) dollars, which was to be forfeited to us by the successful bidder should he fail to enter into an agreement and to furnish bonds as provided in the conditions of proposals and contract.

On the 27th day of April, 1895, we entered into an agreement with them for the delivery of the pipe and specials according to the plans and specifications at the price quoted—they giving us a bond in the sum of thirty-two thousand (\$32,000.00) dollars, with local bondsmen, as sureties, for the faithful performance of the contract. They began delivering the pipe May 23, 1895, and completed the delivery of 680 pieces of straight pipe and 7 specials December 7, 1895.

We engaged Geo. H. Barr to inspect the pipe and specials at the foundry where they were cast, who looked after the interests intrusted to him to our entire satisfaction, and we believe it resulted in our having the best lot of 60-inch cast iron pipe ever made in the United States.

	Pounds.	Per ton of 2,000 pounds.
Amounted to.....	7,202,213	@ \$18.00 \$64,819.92
Specials	3,775	365.00
Total.....	7,205,988	\$65,184.92

The actual weight of the pipe and specials exceeded the approximate weight by about $2\frac{1}{4}$ per cent., which we consider a very small variation.

Shortly after entering into this contract, the parties agreed to allow us interest at the rate of six (6) per cent. per annum on all payments made prior to maturity, of which we availed ourselves. Between June 8, 1895, and December 7, 1895, advances were made of forty thousand (\$40,000.00) dollars, the interest thus saved will cover all interest charges on original contract.

The plans and specifications for doing the work, required the excavation of a trench through rock, clay and other material to be met with in the bottom of the bay, to a depth and of a width to permit the laying of a sixty (60) inch cast iron pipe, to the line and grade as shown in the plans. Work to begin at the south end of the proposed intake, close to the pumping station and to extend northwest a distance of eight thousand two hundred (8,200) feet.

The bidder was required to state the kind of joint he proposed to use under water, and to hold us harmless from all infringements, etc. He was to set in place the sixty (60) inch valve, furnish brick and build the valve chamber, the same to be located at south end of said work.

We were to furnish on the grounds at the pumping station the valve just mentioned, pipe, specials and lead, the contractor to furnish all other material necessary and to do all work required to make a water-tight sixty (60) inch cast iron conduit eight thousand two hundred (8,200) feet long, including all material for making, and putting in place the submerged crib at the outer end of said intake; to begin work within twenty-five (25) days from the date of executing the contract and to finish the same on or before December 31, 1895,—and for each and every day thereafter that the work remained uncompleted the contractors were to pay Fifty Dollars (\$50.00) as ascertained and liquidated damages. It also specified that payment would be made during the first week of each month for the pipe laid, complete and tested, during the preceding month, to our satisfaction and in accordance with the contract, at the rate of eighty-five (85) per cent. of the

contract price per foot ; at the completion and acceptance of the whole work a further payment of ten (10) per cent. will be made; but the remaining five (5) per cent. is to be retained by us until six (6) months thereafter, to make good any defects that may appear during that period. Interest is not allowed on deferred payments. The specifications also provided that after the pipe and crib are laid and all connections made, and when the contractor himself considers the work completed, and before being accepted by us, the work shall be tested to our satisfaction, either by pumping the water out of the pipe, first having the mouth of the pipe in the intake crib closed by means of a button, or water-tight cover which is to be placed by the contractor at his own expense ; or by any other method that may be suggested by the contractor and to be approved by us.

The specifications also provided that the contractor shall keep the intake and crib in good repair for six (6) months after the date of its completion and acceptance, and shall correct and repair promptly during the time all leaks or failures of whatsoever description, at his expense.

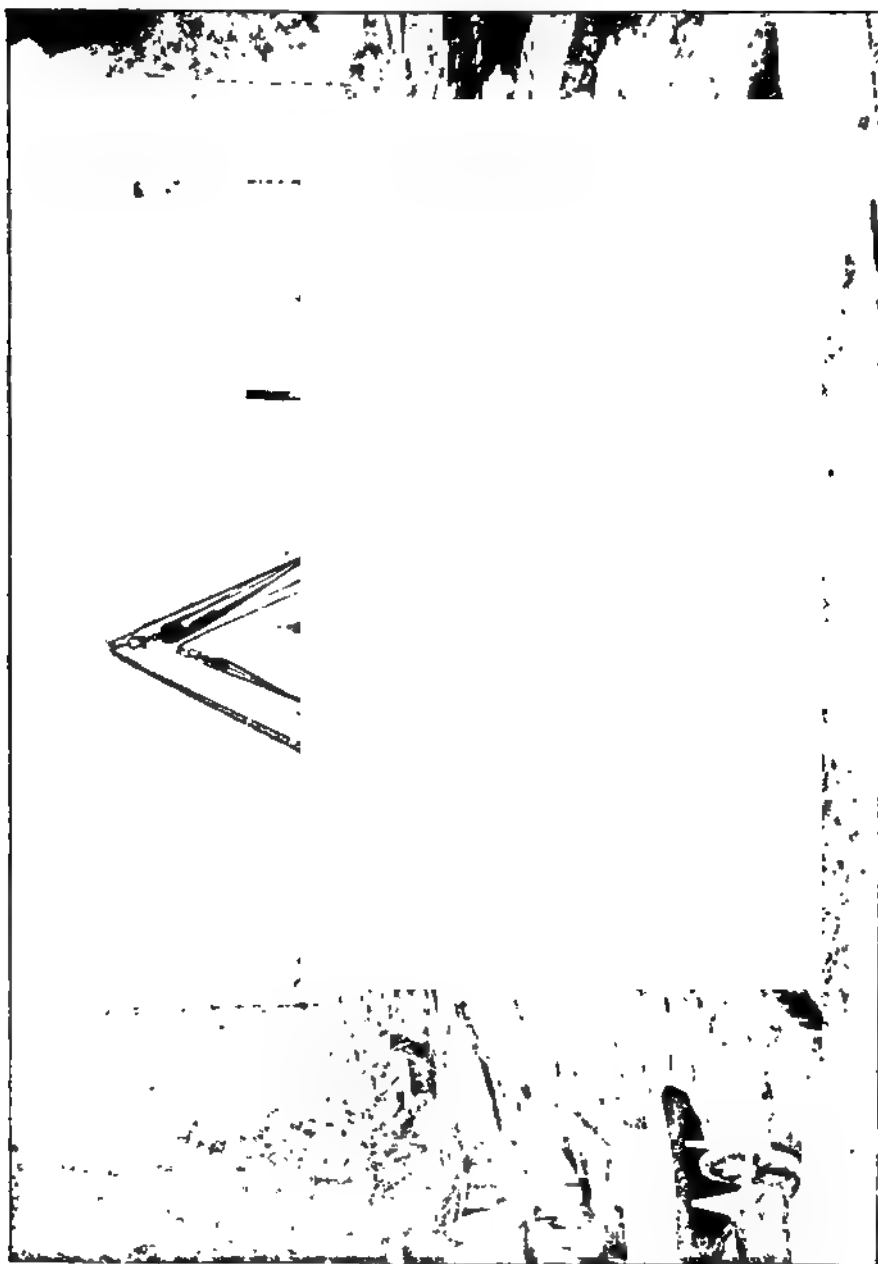
Bidders were requested to state the price, per lineal foot, they would do the work for.

For doing this work we advertised for proposals in our local daily papers, the *Engineering News* and *Engineering Record*, both of New York, N. Y., and in the leading daily papers of Buffalo, Cleveland, Toledo, Milwaukee and Chicago.

On Thursday, April 25, 1895, bids were received, on blanks prepared for that purpose, as follows :

<i>Bidders.</i>	<i>Address.</i>	<i>Price per lineal foot.</i>
Buffalo Dredging Co.....	Buffalo, N. Y.....	\$8.50
Shailer & Schniglau Co.....	Chicago, Ill.....	7.30
Hingston & Wood.....	Buffalo, N. Y.....	6.50
Thacher & Breymann.....	Toledo, Ohio.....	6.30

Each bid was accompanied with a certificate of deposit issued by a bank in this city, in our favor, for the sum of one thousand (\$1,000.00) dollars, which was to be forfeited to us by the success-



ful bidder should he fail to enter into an agreement and to furnish bonds as provided in the conditions of proposals and contract.

Thacher & Breymann being the lowest bidders were immediately awarded the contract.

On the 27th day of April, 1895, articles of agreement were signed, they giving us a satisfactory local bond in the sum of twenty-six thousand (26,000.00) dollars for the faithful performance of the contract.

Work was begun by the contractors on the 9th day of May, 1895, and on the 17th day of June, the sixty (60) inch valve was put in position, and on the 18th day of June, the first piece of pipe was laid, and from that date to the 5th day of December, when they suspended labor, there had been laid 3,816.45 feet of pipe, for which we were to pay \$24,043.63. Of this sum 85 per cent. has been paid, amounting to \$20,437.09.

Perhaps, in connection with this, a brief description of the manner of joining the pipes and placing them in position will prove interesting.

Close to the water's edge several timbers are placed, a number of them lying level on the ground, so spaced that they will give a uniform support to the six joints of pipe that are to be united into one section: the other timbers are so inclined as to form a way for the launching of the section. On the inner portion of this plankless platform a wire cable is stretched, for the purpose of carrying the molten lead which is used in uniting the pipes. After six pieces of pipe are rolled onto this platform the spigot ends are inserted into the bell ends of their opposites, when the ordinary lead joint is made, and after being thoroughly caulked, the six pieces form a section that is as rigid as though it was a single casting. The sections average 72 to 12 feet in length and average in weight $31\frac{1}{2}$ tons. The spigot ends of each section being slightly tapered in a lathe at the foundry where they are cast, are inserted into the bell end of the preceding section and a lead joint made, after which the spigot end is withdrawn, leaving the lead gasket or packing in the bell. Closing both ends of the section it is launched, buoyed by casks and floated to a posi-

tion directly above its intended bed under the water of the bay, then by removing the cap from the spigot end, detaching enough of the casks to permit the section to sink slowly, and drawing the spigot end of one section into the bell end of the preceding section by threaded rods or draw-bolts with sufficient force to compress the lead gasket; the final formation of the joint being performed by a diver under water.

Frequent tests of the intake are made to know whether or not the joints are tight. This is done by lowering the water in the intake at the manhole (which is situated near the sixty (60) inch valve,) the water rising would indicate a leak, and the time required for it to return to its normal elevation would show whether it was a large or a small one.

When the work on that section of Intake No. 2 which is now under contract is completed we will have the longest line of submerged sixty (60) inch cast iron pipe in the world; and as we also have the highest stand-pipe in the world, it will be seen that the Water Works of Erie have some things of which no other water works can boast.

In this report we have deemed it advisable to insert cuts of the Pumping Station, Reservoir, sixty (60) inch cast iron pipe (lying at the dock ready for use next spring), sixty (60) inch valve in place and cutting through rock at that point, joining pieces of pipe into sections, sections ready for lowering to bottom of trench under water, profile showing grade line of conduit, indicating on same the portion completed and uncompleted; map of the harbor showing direction of conduit and proposed north terminal of same; submerged crib, etc., all of which we feel will be of deep interest to our citizens.

We cannot close this report without referring to the great question of building the intercepting sewer, which this department is on record as having always favored and still considers a necessity, not only for the purification of our water supply, but for the general health of our community, and we firmly believe that if this important work were undertaken, as proposed and agreed upon

several years ago and pushed forward to completion, the water furnished from our proposed stopping place in "Big Bend" could be maintained of such a quality that further extension of the intake pipe to the open lake would be found unnecessary. We have the honor to remain

Yours respectfully,

WM. HARDWICK,

C. J. BROWN,

T. W. SHACKLETT,

Commissioners of Water Works, in the City of Erie.

PIPE IN YARD, AT HARBOR.

**Monthly Receipts from all Sources During the Year
Ending December 31, 1895.**

Month.	Assessment.	Meter.	Special.	Plumbing.	Building.	Total.
January.....	\$19,863 71	\$ 5,199 29	\$ 19 87	\$ 562 48	\$ 6 80	\$ 25,652 15
February.....	2,163 90	49 93	9 42	248 62	13 87	2,485 74
March.....	113 72	.....	17 50	3 98	23 45	158 65
April.....	19,810 48	5,711 00	20 09	3 40	89 08	25,634 05
May.....	2,650 19	1,322 68	39 50	.....	158 93	4,171 30
June.....	595 63	.....	29 16	12 06	117 27	754 12
July.....	21,069 06	5,420 47	20 30	6 75	172 65	26,689 23
August.....	2,119 18	167 11	36 67	29 82	89 03	2,441 81
September.....	258 51	53 34	22 12	19 08	138 56	491 61
October.....	20,849 02	5,312 87	23 25	714 01	120 77	27,019 92
November..	2,266 78	499 53	17 34	31 13	28 74	2,843 52
December.....	177 65	13 25	2 09	246 79	23 87	463 65
Total.....	\$91,937 83	\$23,749 47	\$257 31	\$1,878 12	\$983 02	\$118,805 75

**Receipts from Each Ward During the Year Ending
December 31, 1895.**

Ward.	Assessment.	Meter.	Special.	Plumbing.	Building.	Total.
First.....	\$12,454 57	\$ 3,103 37	\$ 47 79	\$ 515 74	\$204 51	\$ 16,325 98
Second.....	20,431 60	12,178 21	60 50	179 21	213 07	33,062 59
Third.....	22,827 81	3,621 83	22 79	401 09	228 77	27,102 29
Fourth.....	17,818 02	970 73	59 60	19 26	107 07	18,974 68
Fifth.....	7,797 89	2,743 20	45 96	5 11	110 83	10,702 99
Sixth.....	9,830 15	793 13	12 41	716 79	107 33	11,459 81
Seventh.....	777 79	339 00	8 26	40 92	11 44	1,177 41
Total.....	\$91,937 83	\$23,749 47	\$257 31	\$1,878 12	\$983 02	\$118,805 75

Cash Account of Secretary and Treasurer of Commissioners of Water Works, in the City of Erie, for the Year Ending December 31, 1895.

Month.	Receipts.	Deposited with Treasurer City of Erie.	Balance in Office at Close of Business each month.
January.....	\$25,652 15	\$23,577 20	\$2,074 95
February.....	2,485 74	4,510 86	49 83
March.....	158 65	163 32	45 16
April.....	25,634 05	21,942 11	3,737 10
May.....	4,171 30	7,848 72	59 68
June.....	754 12	661 04	152 76
July.....	26,689 23	24,165 55	2,676 44
August.....	2,441 81	4,948 68	169 57
September.....	491 61	430 99	230 19
October.....	27,019 92	24,203 22	3,046 89
November.....	2,843 52	5,718 77	171 64
December.....	463 65	635 29	.....
Total.....	\$118,805 75	\$118,805 75	.....

Statement of Account with Treasurer of the City of Erie, Pa., for the Year Ending December 31, 1895.

Month.	Received from Secretary and Treasurer Commissioners of Water Works, in the City of Erie.	Paid on Warrants of Commissioners of Water Works, in the City of Erie.	Monthly Balances.
Balance from 1894.....	\$18,887 00	.....	.....
January.....	23,577 20	\$1,102 97	\$41,361 23
February.....	4,510 86	5,043 53	40,828 56
March.....	163 32	5,740 09	35,251 79
April.....	21,942 11	2,555 69	54,638 21
May.....	7,848 72	8,101 32	54,385 61
June.....	661 04	19,195 32	35,851 33
July.....	24,165 55	14,379 02	45,637 86
August.....	4,948 68	20,923 12	29,663 42
September.....	430 99	7,196 29	22,898 12
October.....	24,203 22	11,622 16	35,479 18
November.....	5,718 77	14,712 84	26,485 11
December.....	635 29	22,198 95	4,921 45
Total.....	\$137,692 75	\$132,771 30	.....

Amount of Water Rents Collected Each Year, with the Increase and Decrease Since the Commencement of the Works.

YEAR.				Amount Rec'd.	Increase.	Decrease.
From Jan. 1, 1869, to Dec. 31, 1869.....				\$ 4,264 47	.....	.....
"	"	1870, to	" 1870.....	9,237 30	\$4,972 83	.....
"	"	1871, to	" 1871.....	18,138 08	8,900 78	.....
"	"	1872, to	" 1872.....	21,652 68	3,514 60	.....
"	"	1873, to	" 1873.....	25,560 40	3,907 72	.....
"	"	1874, to	" 1874.....	27,938 90	2,378 50	.....
"	"	1875, to	" 1875.....	29,639 38	1,700 48	.....
"	"	1876, to	" 1876.....	31,048 76	1,409 38	.....
"	"	1877, to	" 1877.....	32,276 57	1,227 81	.....
"	"	1878, to	" 1878..	29,636 01	.....	\$2,640 56
"	"	1879, to	" 1879.....	33,343 20	3,707 19	.....
"	"	1880, to	" 1880.....	37,385 00	4,041 80	.....
"	"	1881, to	" 1881.....	40,385 87	3,000 87	.....
"	"	1882, to	" 1882.....	43,818 73	3,432 86	.....
"	"	1883, to	" 1883.....	48,269 89	4,451 16	.....
"	"	1884, to	" 1884.....	51,852 78	3,582 89	.....
"	"	1885, to	" 1885.....	53,550 35	1,697 57	.....
"	"	1886, to	" 1886.....	58,725 00	5,174 65	.....
"	"	1887, to	" 1887.....	67,121 92	8,396 92	.....
"	"	1888, to	" 1888.....	73,197 03	6,075 11	.....
"	"	1889, to	" 1889.....	81,110 68	7,913 65	.....
"	"	1890, to	" 1890	87,279 96	6,169 28	.....
"	"	1891, to	" 1891.....	93,891 55	6,611 59	.....
"	"	1892, to	" 1892.....	105,527 03	11,635 48	.....
"	"	1893, to	" 1893.....	111,247 43	5,720 40	.....
"	"	1894, to	" 1894.....	111,821 94	574 51	.....
"	"	1895, to	" 1895.....	116,927 63	5,105 69	.....
TOTAL.....				\$1,444,848 54		

DISBURSEMENTS.

Department.	Account.	For the Year 1895.			From beginning of Works to December 31, 1895.
		Labor.	Material.	Total.	
Construction....	Ad., Books, Sta. and Printing.....	a \$ 47 64	\$ 12 74	\$ 60 38	\$ 264 61
	Buildings and Grounds.....	233 29		233 29	86,880 78
	Boilers.....	a			3,364 13
	Civil Engineering.....				8,554 80
	Connections.....	2,742 85	2,321 39	5,064 24	106,430 36
	Drinking Fountains.....	d 92 53	409 56	502 09	1,162 48
	Engines and Boilers.....				93,336 61
	Engines.....	a			15 05
	Engine No. 4.....	b			48,353 18
	Engine House No. 3.....	b			21,401 94
	Engine Room Fur. and Fix.....				1,398 86
	Expense.....	a 90 47	17 02	107 49	306 80
	Electric Light Plant.....	a			722 98
	Fire Hydrants.....	a 95 65	465 45	561 10	21,571 88
	Fuel.....	a 54	24 77	25 31	147 52
	Gas Well.....				8,148 59
	Horse, Wagon and Cartage.....	121 69	216 47	338 16	4,111 97
	Intake Pipe No. 1.....				49,474 39
	Intake Pipe No. 2.....	b 26,703 52	44,783 02	71,486 54	79,505 92
	Interest and Discount.....				99,420 95
	Light—Oil, Lamps, Wicks, etc.....	a 65	29 40	30 05	133 04
	Lowering Mains.....	5 89		5 89	540 20
	Mains and Branches.....	4,982 95	6,312 23	11,295 18	507,601 18
	Main, 30-inch.....				75,955 61
	Meters.....	300 43	760 87	1,061 30	16,271 56
	Office Furniture and Fixtures.....	a 2 48	112 87	115 35	1,068 85
	Oil and Tallow.....	b 05	2 25	2 30	5 16
	Paving and Street Repairs.....	b			4 07
	Park Fountains.....				3,244 68
	Railroad Switch and Scales.....				2,918 92
	Reservoir.....				123,150 83
	Stop Valves.....	76 67	969 40	1,066 07	30,463 10
	Superintendent's Stores.....				217 05
	Superintendent's Expense.....	a			52 82
	Shop Rent.....	a 4 56	113 09	117 65	539 58
	Tools and Repairs.....	184 59	169 65	354 24	4,385 76
	Telephone and Telegraph.....	a			11 09
	Water Lots.....	c 2,404 28	2,176 80	4,581 08	4,581 08
Maintenance ...	Ad., Books, Sta. and Printing.....	a 47 55	9 23	56 78	236 07
	Buildings and Grounds.....	a 713 33	231 03	944 36	6,672 42
	Boilers to December 31, 1892.....				18,365 28
	Boiler No. 1.....	c 28 81	106 11	134 92	547 09
	Boiler No. 2.....	c 35 93	96 84	132 77	554 65
	Boiler No. 3.....	c 35 28	219 49	254 77	657 27
	Boiler No. 4.....	c 30 19	205 04	235 23	704 99
	Boiler No. 5.....	c 42 06	80 09	122 15	303 53
	Boiler No. 6.....	c 37 88	84 12	122 00	289 82
	Boiler House.....	c 28 18	7 45	35 63	506 35
	Connections.....	1,228 71	125 06	1,353 77	7,316 02
	Drinking Fountains.....	d 12 33	10 79	23 12	32 78
	Engines to December 31, 1892.....				13,402 04
	Engine No. 1.....	c 48 52	5 67	54 19	112 30
	Engine No. 2.....	c 44 98	175 51	220 49	310 09
	Engine No. 3.....	c 59 75	129 83	189 58	430 56
	Engine No. 4.....	d 72 89	406 05	478 94	617 82
	Engine House No. 1.....	c 11 02	1 28	12 30	1,003 01
	Engine House No. 2.....	c 316 23	296 72	612 95	1,229 08
	Engine House No. 3.....	c 22 96	13 77	36 73	363 64
	Engineer's Stores.....	b			1 05
	Engine Room Fur. and Fix.....	a 17	7 54	7 71	175 73
	Expense.....	a 89 90	15 57	105 47	287 96
	Electric Light Plant.....	b 1 84	83 87	85 71	203 91
	Fire Hydrants.....	a 324 44	219 10	543 54	1,682 31
	Fuel.....	a 60	27 54	28 14	104 78

DISBURSEMENTS—Continued.

Department.	Account.	For the Year 1895.			From beginning of Works to December 31, 1895.
		Labor.	Material.	Total.	
Maintenance.....	Horse, Wagon and Cartage.....	\$ 121 80	\$ 220 83	\$ 342 63	\$ 4,121 78
	Intake Pipe No. 1.....	a 22 27	12 04	34 31	146 11
	Light—Oil, Lamps, Wicks, etc.....	a 48	21 65	22 13	71 54
	Mains and Branches.....	640 82	29 03	669 85	17,846 41
	Main, 30-inch.....	a .....	.....	.....	899 33
	Meters.....	97 68	228 39	326 07	4,642 12
	Office Furniture and Fixtures.....	a 3 47	157 89	161 36	262 11
	Oil and Tallow	b 05	2 25	2 30	4 54
	Paving and Street Repairs.....	a .....	.....	.....	449 94
	Railroad Switch and Scales.....	a 114 86	124 16	239 02	614 70
	Reservoir.....	801 90	524 14	1,326 04	24,873 98
	Stand Pipe.....	c 100 81	366 32	467 13	3,816 93
	Stop Valves.....	74 29	7 00	81 29	4,251 40
	Superintendent's Stores .....	.....	.....	.....	396 52
	Superintendent's Expense.....	a .....	.....	.....	52 56
	Shop Rent.....	a 4 56	113 09	117 65	539 34
	Tools and Repairs.....	186 17	252 28	438 45	4,809 84
	Waste and Packing.....	b .....	.....	.....	22 18
	Ad., Books, Sta. and Printing.....	a 50 32	135 26	185 58	849 17
Operating.....	Buildings and Grounds.....	b 1,287 66	.....	1,287 66	3,701 62
	Engineers and Firemen.....	5,617 74	.....	5,617 74	117,469 57
	Engineer's Stores.....	.....	.....	.....	2,348 57
	Expense.....	a 176 83	87 89	264 72	805 18
	Electric Light Plant.....	b 03	1 50	1 53	33 13
	Fire Hydrants.....	b 39 51	.....	39 51	130 58
	Fuel.....	96 50	4,395 86	4,492 36	154,302 20
	Horse, Wagon and Cartage.....	d 18	8 02	8 20	45 50
	Inspectors.....	c 2,427 14	.....	2,427 14	6,734 32
	Insurance.....	2 40	109 33	111 73	1,265 08
	Light—Oil, Lamps, Wicks, etc.....	a 30	13 63	13 93	254 67
	Meters.....	b 802 48	3 51	805 99	2,025 92
	Oil and Tallow.....	21 23	967 31	988 54	11,585 49
	Reservoir.....	b 490 53	.....	490 53	1,812 37
	Rent of Office.....	b 4 41	153 23	157 64	564 76
	Stop Valves.....	c 36 77	.....	36 77	36 77
	Tools and Repairs.....	a 2 10	95 71	97 81	328 52
	Taxes—State, County and School.....	.....	.....	.....	1,479 33
	Telephone and Telegraph.....	a 4 79	217 99	222 78	738 38
	Waste and Packing.....	5 80	264 11	269 91	4,957 80
Accounting.....	Water Rents returned.....	96	43 75	44 71	1,056 65
	Ad., Books, Sta. and Printing.....	9 74	443 77	453 51	8,890 68
	Expense.....	49	22 23	22 72	14,763 99
	Horse, Wagon and Cartage.....	b .....	.....	.....	17 30
	Postage.....	6 41	291 77	298 18	5,531 14
Sundries.....	Salaries.....	7,304 92	.....	7,304 92	168,563 73
	City of Erie Sinking Fund Com.....	.....	.....	.....	105,500 00
Legal.....	City of Erie, Penna.....	a .....	.....	.....	6 41
	Court Costs.....	.....	.....	.....	478 40
	Counsel Fees.....	100 00	.....	100 00	3,258 53
	Expense.. ..	a .....	.....	.....	89 02
Totals		\$ 61,982 68	\$ 70,788 62	\$ 132,771 30	\$ 2,152,344 34

a Accounts started in 1891.

b Accounts started in 1892.

c Accounts started in 1893.

d Accounts started in 1894.

e Accounts started in 1895.



RECAPITULATION.

Department.	For the Year 1895.				From be- ginning of Works to December 31, 1895.
	Pro Rata.	Labor.	Material.	Total.	
Construction.....	.7306376+	\$38,090 73	\$58,916 98	\$97,007 71	\$1,408,788 68
Maintenance .....	.0754642+	6,402 71	4,616 77	10,019 48	123,930 88
Operating .....	.1322935+	11,067 68	6,497 10	17,564 78	312,525 58
Accounting.....	.0608514+	7,321 56	757 77	8,079 33	197,766 84
Sundries.....	.....	.....	.....	.....	105,506 41
Legal.....	.0007531+	100 00	.....	100 00	3,825 95
Totals.....	.9999998+	\$61,982 68	\$70,788 62	\$132,771 30	\$2,152,344 34

1895. Statement of Accounts with City of Erie, Pa. 1895.

CITY OF ERIE, PA.		DR.	
WATER—Fire Hydrants.....		\$48,400 00	
Park Fountains.....		1,251 05	
Flushing Mill Creek.....		\$850 00	
" Sewers.....		371 00	1,221 00
City Hall.....		248 14	
Engine Houses.....		176 98	
Drinking Fountains.....		72 97	
Lake Front Park.....		72 00	
East Park.....		50 00	
West Park.....		50 00	\$51,542 14
INTEREST—From Second Nat'l			
Bank Balances,			
October 1, 1894,			
to April 1, 1895..		273 62	
April 1, 1895, to			
October 1, 1895..		411 40	685 02
Balance.....			676,090 52
CREDITS.			
BALANCE—December 31, 1894.		685,677 06	
INTEREST—On same to De-			
cember 31, 1895.		41,140 62	
RENT—Of Offices one year.....		1,500 00	728,317 68
Balance.....			\$676,090 52

1895. Statement of Resources and Liabilities December 31, 1895.

RESOURCES.		
PLANT NORTH OF FRONT STREET—Buildings and Grounds, including Piers.....		
Engine House No. 3, from January 1, 1892.....	\$106,030 50	
	21,591 35	\$127,621 85
Boilers from January 1, 1891.....		
Engines and Boilers to January 1, 1891.....	3,409 15	
Engine No. 4, from January 1, 1892.....	104,325 20	
	49,058 00	156,792 35
Electric Light Plant.....		
Engine Room Furniture and Fixtures.....		732 69
Intake Pipes—No. 1.....	55,568 44	1,549 20
No. 2 from January 1, 1892.....	81,876 93	137,445 37
Railroad Switch and Scales.....		
Water Lots from January 1, 1895.....		3,262 09
		4,630 51
		\$432,034 06
PLANT SOUTH OF FRONT STREET—Connections.....		
Drinking Fountains from January 1, 1894.....	115,384 56	
Fire Hydrants.....	1,177 15	
Mains and Branches.....	26,292 80	
Main, 30-inch.....	638,135 56	
Meters.....	17,228 25	
Stop Valves.....	33,218 68	831,437 00
Office Furniture and Fixtures.....		1,084 88
Reservoir.....		137,629 35
		970,151 23
		1,402,185 29
PERSONAL—Cash in hands of Treasurer of City of Erie.....		
ACCOUNTS—Assessed....	485 74	4,921 45
Meter.....	6,033 50	
Plumbing.....		6,756 83
		11,678 28
		\$1,413,863 57
LIABILITIES.		
Accounts—City of Erie, Pa.....		
Advance on Assessed.....	676,090 52	
Balance.....	221 27	676,311 79
		737,551 78
		\$1,413,863 57

Statement of Meters--December 31, 1898.

KIND.	IN USE.							NOT IN USE.							TOTAL.						
	SIZE.							Total	SIZE.							Total					
	1/2	3/4	1	1 1/2	2	3	4		1/2	3/4	1	1 1/2	2	3	4						
Union.....	32	6	8	9	6	8	69	8	35	6	9	13	6	8	77						
Worthington.....	3	10	5	1	1	1	20	1	3	11	5	1	1	21							
Thomson.....	2	6	4	4	4	4	25	2	3	6	4	4	5	1	4	27					
Crown.....	3	3	1	7	1	2	17	3	1	4	3	1	8	1	2	20					
Empire.....	2	3	2	1	3	5	16	1	1	1	1	3	1	5	1	5					
National.....	1	1	1	1	1	1	6	1	1	1	1	1	1	1	1	1					
Gem (for watering cart).....																					
Total.....	2	44	25	19	24	9	137	15	4	48	26	20	31	9	14	152					

One 1-inch Worthington repaired, taken out of scrap. Two 2-inch Worthington scrapped, not worth repairing. One 3/4-inch Worthington scrapped, not worth repairing.

KIND.	GOOD.										POOR.										TOTAL.																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																													
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	%	¾	1	1½	2	3	4	%	¾	1		1½	2	3	4	%	¾	1	1½	2	3		4	%	¾	1	1½	2	3	4	Total.																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																			
Union.....		35	6	9	13	6	8	77																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																										

Pumping Engine Statistics for 1895.

The pumps are four in number. Nos. 1 and 2 are known as the Cornish Bull Pumps. The diameter of each plunger is 20¾ inches, and each has a stroke of 10 feet. The capacity of each pump is estimated to be 165 gallons to each stroke. Pump No. 3 is a Gaskill Horizontal Compound Pumping Engine, having two H. P. cylinders 21 in. diameter, two L. P. cylinders 42 in. diameter, and two pumps 19½ in. diameter, and all 36 in. stroke, of a guaranteed capacity of 5,000,000 gallons daily at a piston speed of 120 feet per minute against a head of 237 feet. Pump No. 4 is a Worthington Horizontal Compound High Duty Engine, having two H. P. cylinders 33 in. diameter, two L. P. cylinders 66 in. diameter, and two pumps 29 in. diameter, and all 49¾ in. stroke, of a guaranteed capacity of 12,000,000 gallons daily at a piston speed of 128 feet per minute against a head of 260 feet. The Stand Pipe is 259.65 feet high. The Reservoir is nearly two miles from the Pumping Works, the bottom of which is 210 feet above the surface of the Bay, and the water has been maintained during the year at an average depth in the Reservoir of 25.10 feet.

Month.	No. 1.		No. 2.		No. 3.		No. 4.		Totals.		Daily Average	Average Lift in Feet.
	Days Run	Gallons	Days Run	Gallons	Days Run	Gallons	Days Run	Gallons	Days Run	Gallons		
Jan.							31	166,583,112	31	166,583,112	5,373,648	237.10
Feb.	3	2,266,605	6	7,987,325	8	42,351,764	22	152,786,976	38	205,342,670	7,333,666	237.17
March.							31	166,779,624	31	166,779,624	5,379,987	237.86
April.			2	2,030,325			30	142,479,480	32	144,509,805	4,816,993	237.68
May.			2	2,409,000	7	18,889,416	28	135,547,464	37	156,845,880	5,059,541	235.65
June.			1	1,851,300	6	19,025,370	28	166,486,512	35	187,363,182	6,245,439	234.50
July.							30	171,984,984	30	171,984,984	5,547,902	237.29
August.					1	5,281,822	30	160,590,600	31	165,872,422	5,350,723	237.77
Sept.					4	17,287,998	26	143,782,200	30	161,070,198	5,369,006	237.88
Oct.			2	1,306,800	4	17,681,118	28	133,956,600	34	152,944,518	4,933,634	237.92
Nov.					3	13,669,110	28	126,344,520	31	140,013,630	4,667,121	238.09
Dec.							31	156,086,280	31	156,086,280	5,035,041	238.02
Total.	3	2,266,605	12	15,534,750	33	134,186,598	343	1,823,408,352	391	1,975,396,304	5,426,064	237.24

The regular employes at the Pumping Works are one chief engineer, two assistant engineers, three firemen, one watchman and one janitor. The chief engineer stands a watch of five hours, from 7 to 12 every forenoon; the assistants divide the remainder of each day equally between them; each one of the firemen stands a watch of eight hours. Besides firing, the firemen unload the coal from the cars, except when two pumps are run, in which case they are assisted by the watchman or a laborer. The chief engineer gives ten hours daily to the services of the Commissioners of Water Works in the City of Erie, the hours when he is not on watch being employed in repairs, supervision, etc. In addition to standing their regular watch, the assistant engineers aid their superior officer in keeping the machinery in order. The watchman takes care of the grounds and does such other work as may be required of him. The janitor takes care of the buildings.

Amount of Coal Consumed in Pumping, Gallons of Water Pumped, Average Height Pumped, Cost per Million Gallons, Etc., from First Year Works were Operated to Dec. 31, 1895.

YEAR.	Tons Coal Consumed.	Price Coal per ton from May 1st of each year.	Cost Coal from Jan. 1st to Dec. 31st.	Grades of Bituminous Coal.	Gallons of Water Pumped.	Increase or Decrease.	Number of places supplied.	Number of Fire Hydrants.	Average height of Water in Reservoir above surface of Bay.	Cost Coal per million gallons raised to Reservoir.	Gallons raised to Reservoir by one pound of Coal.
1868.....	59 1	\$5 05	\$309 61	Lump.	.....	.....	.....	.....	.....	.....	.....
1869.....	544 4	5 05	4,818 48	"	.....	.....	.....	.....	.....	.....	.....
1870.....	1,064 5	5 05	5,159 10	"	246,648,960	.....	1,218	97	232 0	\$18 76	98 5
1871.....	1,422 7	5 05	7,117 00	"	279,368,495	32,719,535 i	1,727	99	232 0	16 52	150 9
1872.....	1,308 5	5 05	6,528 50	"	395,076,000	115,707,505 i	2,140	103	232 0	21 90	114 8
1873.....	1,672 5	5 05	8,412 65	"	384,062,415	11,013,585 d	2,475	107	232 0	17 33	126 4
1874.....	1,759 0	4 85	7,709 54	"	444,817,395	60,754,980 i	2,663	107	232 0	16 30	145 5
1875.....	1,836 4	4 85	8,657 61	"	531,005,475	86,188,080 i	2,700	110	232 0	13 30	159 3
1876.....	1,105 1	4 00	8,925 22	"	670,726,650	139,721,175 i	2,763	112	232 0	12 75	135 7
1877.....	2,456 6	3 70	8,509 33	"	660,981,810	9,744 840 d	2,854	114	232 0	11 64	136 4
1878.....	2,463 3	3 35	7,945 37	"	682,392,315	21,410,505 i	2,915	115	232 0	9 19	153 6
1879.....	2,628 1	3 09	7,428 92	"	807,800,400	125,408,085 i	3,011	121	232 0	8 99	126 0
1880.....	3,076 1	1 99	6,978 41	Slack.	775,805,250	31,995,150 d	3,568	126	232 0	6 68	142 2
1881.....	3,430 3	1 90	6,517 58	"	975,640,934	219,835,684 i	4,110	161	232 0	6 45	139 7
1882.....	2,968 2	1 75	5,355 93	"	829,759,260	145,881,674 d	4,687	171	234 0	4 66	170 0
1883.....	2,398 2	1 55	3,908 59	"	815,939,685	13,819,575 d	5,077	197	234 7	4 99	152 4
1884.....	3,010 8	1 45	4,502 61	"	917,781,350	101,841,665 i	5,395	248	234 3	4 40	159 7
1885.....	3,243 8	1 30	4,575 79	"	1,036,496,665	118,715,315 i	5,658	270	232 9	3 86	165 8
1886.....	3,369 0	1 25	4,318 64	"	1,117,389,075	80,892,410 i	6,140	280	233 3	2 95	216 0
1887.....	2,820 4	1 15	3,589 31	"	1,218,213,688	100,824,613 i	6,368	318	234 1	1 89	292 1
1888.....	2,392 3	1 09	2,545 46	"	1,341,708,002	123,494,314 i	6,600	333	234 6	1 80	301 5
1889.....	2,446 0	1 08	2,661 12	"	1,475,358,220	133,650,218 i	7,086	346	235 2	1 81	322 4
1890.....	2,583 6	1 20	3,052 89	"	1,659,625,551	184,267,331 i	7,728	372	237 3	2 18	291 42
1891.....	3,120 7	1 29	3,941 53	"	1,807,038,580	147,413,029 i	8,255	393	237 4	2 35	279 43
1892.....	3,658 0	1 32½	4,807 11	"	2,047,993,505	240,954,925 i	8,998	415	236 5	2 66	248 6
1893.....	4,693 5	1 32½	6,218 95	"	2,333,638,610	285,645,105 i	9,687	444	236 6	2 43	306 8
1894.....	2,960 0	.....	4,423 59	"	1,816,596,518	517,042,092 d	10,680	479	237 2	2 21	278 62
1895.....	3 541 5	1 22	4,377 16	"	1,975,396,305	158,797,787 i	.....	489	.....	.....	.....

RATES FOR CITY WATER.

Approved by Select Council Aug. 19, 1895. Approved by Common Council Sept. 16, 1895.
Approved by the Mayor, Sept. 21, 1895.

ALL ARE ANNUAL EXCEPT AS OTHERWISE INDICATED, AND PAYABLE QUARTERLY IN ADVANCE.

Air Pump.....	\$ 2 00
Bath Tub—Private (one family) first tub.....	3 00
Bath Tub—Private (one family) each additional tub.....	1 50
Bath Tub—Public, each tub.....	5 00
Bakery, per barrel of flour used (but no charge less than \$5).....	01
Barber Shop, first chair, including hand basin.....	4 00
Barber Shop, each additional chair, including hand basin.....	2 00
Billiard Tables, each.....	1 00
Blacksmith Fire, first fire.....	5 00
Blacksmith Fire, each additional fire.....	2 50
Boarding House, (in addition to family rates) per room.....	1 00
Building Purposes, per bushel lime; to be paid before work is begun.....	02
Butcher Stalls.....	3 00 to 15 00
Charitable Institutions, one-third annual rates.....	
C. W.....	75
Condensing Boiler for Steam Heating, (per season of six months) per horse power,.....	25
Eating Houses.....	5 00 to 25 00
Family.....	5 00
Fire Protection Fixtures, testing same, thirty (30) minutes or less.....	8 00
Fire Protection Fixtures, testing same, one (1) hour or less, but more than thirty (30) minutes.....	5 00
Flushing Sewers, settling earth in ditches or purposes of a like nature, per hour or fractional part of an hour, each.....	5 00
Hand Basins in dwellings, hotels and schools, first basin.....	1 00
Hand Basins in dwellings, hotels and schools, each additional basin.....	50
Hand Basins in offices, stores and blocks, each.....	1 00
Hotels, (in addition to family rates) per room.....	1 00
Laundry, shop.....	5 00
" wash tub, stationary, each.....	2 00
" revolving washer, each.....	5 00
Livery Stable, per horse.....	2 00
Offices.....	3 00 to 10 00
Private Stable, one or two horses.....	2 00
Private Stable, each additional horse over two.....	1 00
Printing Offices.....	5 00 to 30 00
Public Halls.....	5 00 to 25 00
Saloons.....	5 00 to 25 00
School, per pupil (in addition to fixtures).....	10
Slaughter Houses.....	5 00 to 50 00
Sleeping Rooms, each.....	1 00
Sprinkling Streets or Lawns with Hose, Per SEASON:	
Corner lot, 41 feet front or less.....	5 00
Inside lot, 41 feet front or less.....	3 00
For each additional foot front to either corner or inside lot.....	05
Steam Engines, ten hours per day, each Horse Power.....	2 50
Stores.....	3 00 to 15 00
Urinal, private, self-closing, (one family).....	2 00
" not self-closing (one family):.....	6 00
" public, self-closing.....	3 00
" not self-closing.....	10 00
" private or public, continuous flow.....	10 00 to 30 00
Wash Tub, stationary, first tub, (one family).....	2 00
" each additional tub, (one family).....	1 00
Water Closet, pan or tank (one family) private.....	3 00
" each additional water closet.....	1 50
" public, each.....	5 00
" hopper, (one family) private, for each water closet.....	6 00
" public, each water closet.....	10 00
Work Shop, ordinary use.....	3 00 to 5 00

All other uses, when not metered, to be assessed by the Commissioners.

The sprinkling season is from May 1st to November 1st in each year.

There is no fractional part of a sprinkling season.

It will cost as much to sprinkle but once at any time during the sprinkling season as it will to sprinkle each day at the prescribed hours during the entire season.

Sprinkling must be confined to the hours between 5 and 8 A. M., 12 and 1 P. M., and 5 and 8 P. M., nor during said intervals more than one hour at a time. Persons who exceed one hour may be charged at fountain rates, or held liable for violation of the rules, at the option of the Commissioners.

Meter Rates.

Six (6) cents for each one thousand (1,000) gallons by meter measurement, *Provided* the minimum receipts per quarter shall be for a

2 inch or less.....	\$3 75	2 inch.....	\$10 00
1 inch.....	4 50	3 inch.....	18 75
1½ inch.....	6 25	4 inch.....	38 75

Main Pipe Laid in 1895.

LOCATION.	SIZES.					REMARKS.
	1 in.	1½ in.	2 in.	4 in.	6 in.	
Front, at Water Works Pumping Station.....				294	6	
2d, from Ash west.....				353	6	
2d, from Poplar west.....				56		
2d, bet. Holl. and Germ. n.-w....				327	9	{ 319 feet of 1 inch taken out.
4th, from Parade east.....				172		
4th, from Cascade to Raspberry				708	8	
4th, from Raspberry west.....			381	2		
4th, from Ash west.....				437		
5th, from Liberty west.....					179	
5th, from Parade west.....					67	
7th, from Cascade to Plum.....					720	
9th, from Liberty east.....					18	8
9th, from Plum west.....					802	
10th, bet. Plum and Cascade..					285	4
10th, cor. Cascade.....				4	8	H. B.
10th, from Cascade west.....					136	6
12th, from Cranberry west.....					392	
13th, from Peach to State.....					378	
15th, bet. Ash and Reed.....					36	6
16th, bet. Raspberry and Cranb.					519	
16th, from Cascade east.....					519	
19th, from German east.....					196	
20th, from Plum east.....					107	
Brown Av., from Cherry west...					410	2
Brown Av., from 24th south.....			96			
22d, from Cherry west.....					258	
22d, from Raspberry east.....					178	
23d, crossing Sassafras.....					66	{ In place of 66 ft. of 4 in. taken out
24th, " ".....					66	{ In place of 66 ft. of 4 in. taken out
24th, bet. Wayne and Perry.....					114	
24th, bet. Ash and Wallace.....					181	
24th, from French east.....					206	
24th, from Cranberry west.....			52	6		
25th, crossing Sassafras.....					43	{ In place of 43 ft. of 4 in. taken out
27th, bet. State and Peach.....					136	6
28th, from Holland east.....					246	2
Ross, bet. 3d and 4th.....				339	9	
Wilson, bet. 3d and 4th.....				24		
Ash, bet. 2d and 3d.....				72		
Parade, cor. 17th.....		11	6			H. B.
" bet. 4th and 5th.....					128	
" from north of 28th so'th					59	
German, from s. of 15th to 17th.					730	5
" intersection of 19th....					4	
Holland, bet. 27th and 28th.....					170	
Sassafras, from 21st to 23d.....					660	
" from 24th to 25th.....					330	
Myrtle, from 23d to 24th.....					330	
Chestnut, from 26th south.....					325	

Main Pipe Laid In 1895- Continued,

LOCATION.	SIZES.					REMARKS.
	1 in.	1½ in	2 in.	4 in.	6 in.	
Chestnut, bet. 6th and 7th.....				171 6		
Poplar, from 9th north.....					24	
“ “ 2d south.....				62		
“ “ 22d south.....					111	
“ “ 2d north.. ..				134		
“ “ 4th north.....				174		
“ bet. 3d and 4th.....	137					
“ bet. 22d and 23d.....					24	
Liberty, cor. 2d.....				12 4		H. B.
Plum, bet. 12th and 13th.....					111	
“ from 7th north.....					120	
“ “ 9th north.....					50 6	
Cascade, from 5th south.....					173 3	In place of 179 ft. 1 in. taken out.
“ “ 26th north.....					180	
“ bet. 25th and 26th.....	170 6					
“ from 6th north.....					233 5	
“ “ 6th south.....					410	
Raspberry, from 8th to 9th.....					390	
“ “ 21st south.....					532 4	
Cranberry, from 24th to 26th...					652 6	
Penn'a Av., from 11th south....					266	
Brandes, from 26th north.....					155 6	
Pine Av., from 28th south.....					2038 8	
“ “ bet. Chestnut lane and city line.....				15 3		H. B.
Total.....	307 6	11 6	529 8	3358 11	14469 5	

Main Pipe Laid In 1895.
SUMMARY.

Size.						
1 inch.....	307	6 feet.				
1½ “	11	6 “				
2 “	529	8 “				
4 “	3,358	11 “				
6 “	14,469	5 “	18,677	feet.		
LESS PIPE REMOVED.						
1 inch.....	498	feet.				
4 “	175	“	673	feet.		
Total.....			18,004	feet.		
			or 3 miles	2,164	feet.	
PRIVATE PIPE LAID.						
4 inch.....	140	feet.				
6 “	283	10 “	423	10 feet.		
Total.....			3 miles	2,587	10 feet.	
Previously reported.....			89 miles	199	5 “	
Grand total.....			92 miles	2,787	3 feet.	

PIPE JOINTS.



METHOD OF BRIDGING THE GAP AND SECURING THE SLIP JOINT

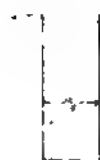


Diagram of the slip joint



Slip joint, made under water

METHOD OF MAKING JOINTS UNDER WATER

Tees Placed in 1895.

Size.	
4 x 4.....	16
6 x 4.....	19
6 x 6.....	2
Total increase.....	—37

Crosses Placed in 1895.

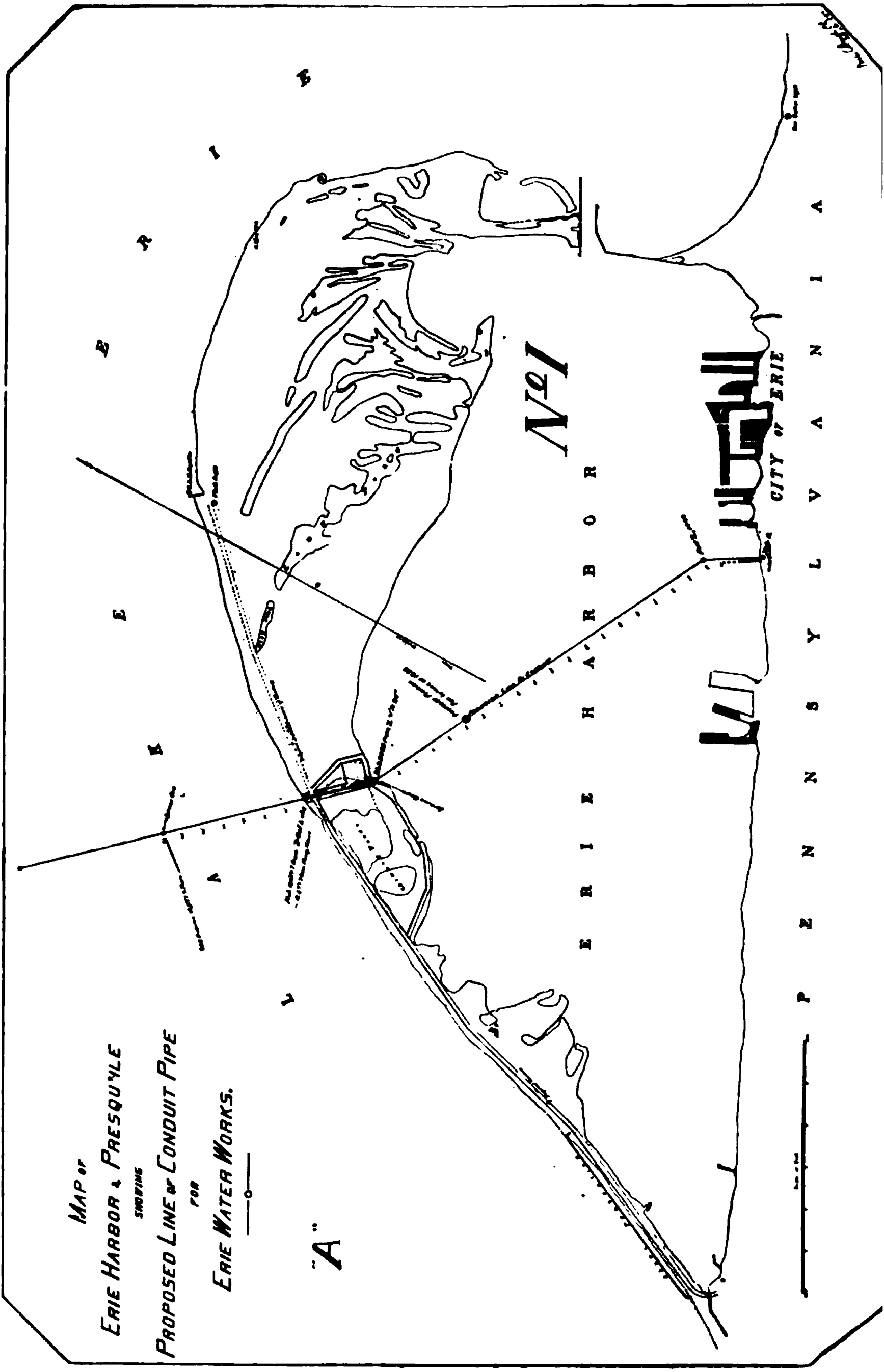
Size.	
4 x 4.....	1
6 x 6.....	14—15
Less removed—	
4 x 4.....	3
6 x 4.....	1— 4
Total increase.....	11

Connections Made in 1895.

Size.	
3/4-inch.....	539
1 ".....	11
1 1/2 ".....	6
2 ".....	6
4 ".....	15
6 ".....	1—578
Less removed—	
3/4-inch.....	14
1 ".....	3
1 1/2 ".....	1
2 ".....	1— 19
Total increase.....	559 amounting to 10.851 1/2 ft. Equalling 2 Miles 291 1/2 "
Previously reported to December 31, 1894.....	34 " 4760 2/3 "
Total to December 31, 1895.....	36 " 5051 3/4 "

N. B —In addition 53 connections were renewed in streets to be paved, and others which had given out.

Streets.		Streets.	
Second.....	25	Holland.....	1
Tenth.....	1	Peach.....	1
Twelfth.....	2	Sassafras.....	7
Fourteenth.....	1	Chestnut.....	8
Sixteenth.....	1	Walnut.....	5
Parade.....	1		—
Total.....			53



Fire Hydrants Placed In 1895.

STREET.	INTERSECTION OF	NAME.
Front & Chest.	At Water Works Pumping Station	Matthews
Second.	N W cor. German...[in place of o. s. Matthews]	"
East Park.		"
West Park.		"
Ninth.	N W cor. Cascade.	"
Tenth.	N E " Cascade [one removed 265 e. of Casc]	"
Eleventh.	N W " Ash.....[in place of Pittsburg]	"
Twelfth.	N E " Walnut.....[in place of Bay State]	"
"	N E " Cherry.....[in place of Bay State]	"
Sixteenth.	180 ft. E of Cranberry.....	Pittsburg
Twenty-fourth.	150 ft. E of Wallace.....	Bay State
"	148 ft. W of Perry.....	Matthews
Twenty-seventh.	N W cor. State.....	"
Parade	N E " Seventeenth.....[for Cart Sprinkler]	Jarecki
German.	N E " Thirteenth.....[in place of Union]	Matthews
Holland	N E " Fourteenth..[in place of West Jersey]	"
French.	72 ft. N of Sixth...[place of Morris, Tasker & Co.]	"
Peach.	S E cor. Nineteenth.....[in place of Bay State]	"
Poplar.	332 ft. S of Twelfth.....[in place of Bay State]	"
Liberty.	S E cor. Second.....	"
Scott.	N E cor. Twenty-seventh...[place of Bay State]	"
Pine Ave.	352 ft. S of Chestnut Lane.....	"
"	20 ft. N of City line.....	"

Fire Hydrants Placed In 1895.

SUMMARY.

Matthews.....	20
Pittsburg.....	1
Bay State.....	1
Jarecki, 1½-inch.....	1 23

HYDRANTS REMOVED.

Matthews (old).....	1
Matthews.....	1
Pittsburg.....	1
Bay State.....	5
Union.....	1
West Jersey.....	1
Morris, Tasker & Co.....	1 11

Total increase.....	12
Number in use December 31, 1894.....	479
Total in use December 31, 1895.....	491

Stop Valves Set in 1895.

STREET.	Location.	Size.	Style.	Res
Front and Chestnut..	Water Works Pump Station....	4	Eddy.	
" " "	" " " "	4	"	
Public Dock.....	266' West of State.....	2	.....
Second.....	West line of Ash.....	4	Eddy.	
"	" " German.....	4	"	
"	East " Holland.....	4	"	
"	295' 6'' East of Holland.....	4	"	
Fourth.....	East line of Parade.....	4	"	
"	West " Cascade..	4	"	
"	East " Raspberry	4	"	
"	West " Ash.....	4	"	
"	" " Poplar.....	4	"	
Sixth.....	East " Cascade.....	6	"	
Seventh.....	" " "	6	"	
"	West " Plum	6	"	
"	East " Chestnut.....	4	"	
Ninth.....	West " Plum	6	"	
"	" " Cascade.....	6	"	
Tenth.....	East " "	6	"	
"	West " "	6	"	
Twelfth.....	" " Cranberry.....	6	"	
Sixteenth.....	" " Raspberry.....	6	"	
"	East " Cascade.....	6	"	
Nineteenth.....	" " German.....	6	"	
Brown Avenue.....	West " Cherry.....	6	"	
Twenty-second.....	" " "	6	"	
"	East " Raspberry	6	"	
Twenty-third.....	West " Sassafras.....	6	"	
Twenty-fourth.....	East " "	6	"	
"	West " "	6	"	
Twenty-fifth	" " "	6	"	
Twenty-eighth.....	East " Holland.....	6	"	
Brandes.....	North " Twenty-sixth..	6	"	
German.....	" " Sixteenth	6	"	
Sassafras.....	" " Twenty-third..	6	"	
"	South " Twenty-first....	6	"	
"	North " Twenty-fifth...	6	"	
Chestnut.....	" " Short.....	4	"	
"	South " Twenty-sixth..	6	"	
Poplar.....	North " Fourth.....	4	"	
Cascade.....	" " Twenty-sixth .	6	"	
"	" " Sixth.....	6	"	
Raspberry	South " Eighth.....	6	"	
"	" " Twenty-first....	6	"	
Cranberry	North " Twenty-sixth ..	6	"	
Pine Avenue.....	South " Twenty-eighth	6	"	

{ In place of
of 4

Stop Valves Set in 1895.

SUMMARY.

Size.	NUMBER.	LESS REMOVED.
2-inch.....	1	4-inch..... 2
4-inch.....	14	<u>2</u>
6-inch.....	31	44
	—	46
		PRIVATE VALVES PLACED.
		4-inch.....
		<u>1</u>
		Total increase.....
		45

THIRTIETH
ANNUAL REPORT
OF THE
COMMISSIONERS
OF
WATER WORKS,
IN THE
CITY OF ERIE,
TO THE
COUNCILS,
FOR THE
YEAR ENDING DECEMBER 31, 1896.

ERIE, PA.:
HERALD PRINT. & PUB. CO.,
1897.

THIRTIETH
ANNUAL REPORT
OF THE
COMMISSIONERS
OF

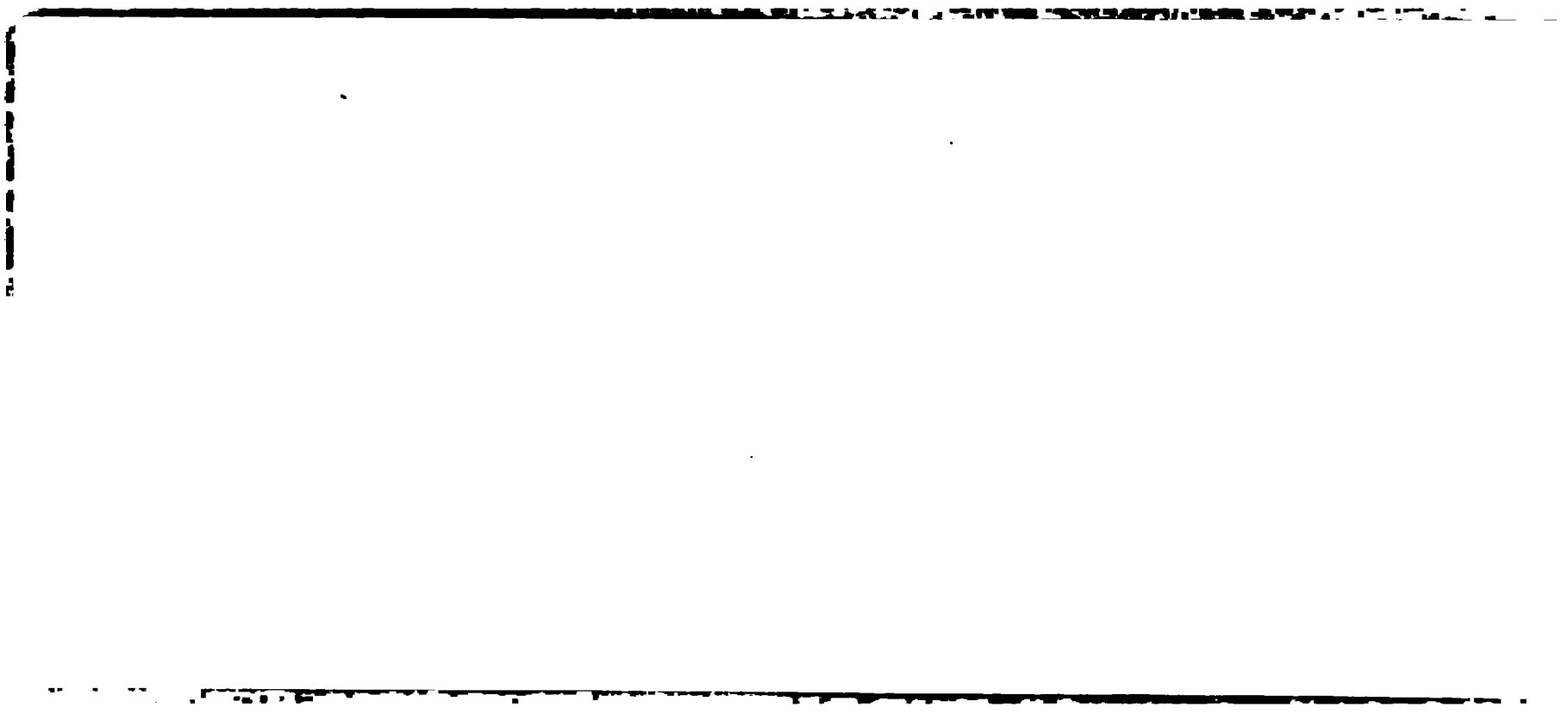
Compliments of . . .

Commissioners of Water Works,
in the City of Erie.

COUNCILS,

FOR THE
YEAR ENDING DECEMBER 31, 1896.

ERIE, PA.,
HERALD PRINT & PUB. CO.,
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ERIE, PA.:
HERALD PRINT. & PUB. CO.,
1897.

Commissioners of Water Works,

in the City of Erie,

Erie, Penn'a.

WILLIAM HARDWICK,
T. W. SHACKLETT,
CLARK OLDS.

Officers.

T. W. SHACKLETT,
President.

WILLIAM HIMROD,
Secretary and Treasurer.

GEO. C. GENSHEIMER,
Assistant Secretary.

F. A. ROTH,
Chief Engineer at Pumping Station.

R. T. WALKER,
Superintendent of Street Work.

OFFICE—City Hall.

OFFICE HOURS—From 8:00 A. M. to 5:00 P. M.; on Mondays to 9:00 P. M.

REGULAR MEETINGS OF THE COMMISSIONERS—Every Saturday at 3:00 P. M., and the first of each month at 11:00 A. M., except when it occurs on Sunday, then they meet the following day, and every Monday at 7:30 P. M.

**WILLIAM L. SCOTT,
COMMISSIONER,
1867.**

ANNUAL REPORT.

To the Councils of the City of Erie, Pa :

GENTLEMEN :—

The thirtieth annual report of the Board of Water Commissioners for the year ending December 31, 1896, is respectfully submitted for your consideration :

RECEIPTS :

Balance in City Treasury, January 1, 1896...	\$ 4,921.45
From Water Rents.....	121,442.94
From all other sources.....	502.37
Total.....	<u>\$126,686.76</u>

DISBURSEMENTS :

Paid for Construction.....	\$88,919.37
“ “ Maintenance.....	10,054.09
“ “ Operating.....	18,979.11
“ “ Accounting.....	8,178.90
“ “ Legal Services.....	100.00
Balance in City Treasury, Dec. 31, 1896.....	635.29
Total.....	<u>\$126,686.76</u>

The revenue derived from water rents shows an increase over the preceding year of \$4,515.31, or nearly 4 per cent.

New mains have been laid aggregating in extent nearly 2 miles, and connections amounting to about 2½ miles, making the total length of mains now laid 94 miles, 2114 6-12 feet, and of connections 39 miles, 1857 feet.

The department has been at considerable outlay for connections on newly paved streets from which no immediate returns will be received, but we follow a wise custom in doing this rather than tearing up the pavements as service pipes are needed and required.

The year has been marked by several very important improvements, notably the completion of the new intake pipe to Big Bend, which was begun two years ago.

The cost of this great undertaking, approximating \$140,000, rendered necessary by the constantly increasing number of sewers that are being built to accommodate the western portion of the city, whose contents are discharged in close proximity to the

WILLIAM W. REED,
COMMISSIONER,
1867-1879.

Water Works, has been met from the surplus funds of the Department,—the last payment (with the exception of \$2,616.76 retained as a guarantee) will be made in the month of January ensuing.

The quality of the water is greatly improved, as is indicated in many ways, particularly by the freedom from debris on the screens protecting the well which were formerly often completely clogged, especially after great wind storms.

There can be little hope, however, of maintaining anything like a pure standard while the source of supply is fouled by the discharge of the city's sewage into it ; and this is the great question constantly confronting us in the grave and responsible duty imposed upon us of furnishing " a full supply of pure and wholesome water."

In the failure to build an intercepting sewer,—which in our judgment is to be regretted—some other means of preventing the further pollution of the water, or for its purification, will be absolutely necessary before many years have passed; either by the less expensive method of diverting the course of Mill Creek, (into which is emptied about four-fifths of the entire sewage of the City,) through the Sand Beach to the open lake ; of chemically treating or otherwise disposing of the discharge from the Canal and Little Cascade Sewers; or for the building of a filtration plant, or the construction of a reservoir, south of the present one, to serve as a settling basin, as well as for additional storage.

Arrangements have recently been made with Dr. Mason of the Troy Polytechnic Institute for periodical examinations of the water,—chemical and bacteriological,—in order to enable us, from time to time, to note its exact condition and possible deterioration; and also in connection with reports from the Health Officer to watch its effect upon the increase or decrease of typhoid fever cases and deaths—a disease so largely, if not entirely, communicable by water.

A paper by Commissioner Olds accompanies this report, and gives the result of his observations and investigation of filtration plants in several European cities. It shows, conclusively, that the filtration method is, after all, the safest and surest ; and plants of this character have already been erected in many cities in our own country, and are being considered by others as the true solution of the pure water problem.

**HENRY RAWLE,
COMMISSIONER,
1867-1871.**

The erection, within the past few years, of a new Engine house, the addition of the Worthington High Duty Pump, with a daily capacity of twelve-million gallons, and the extension of the intake pipe one and one-half miles constitute a work second only in magnitude to the institution of the plant itself, thirty years ago. As a comparison between the present and the past, we have asked Mr. Wm. W. Reed, a member of the first Board of Commissioners, to contribute a brief history of the Water Works, which is herewith presented and will be read with interest.

Incidental to the extension of the new intake pipe, the Commissioners have made and acquired about five acres of land on the water lots at the pumping station, upon which the contractors were required to dump material excavated from the trench in which the pipe was laid and where was also deposited the earth that has been removed in preliminary preparation for the proposed new boiler house. This plot of ground will eventually furnish a location for filter beds or other needs of the Department, and in the meantime, will be made attractive, so the public may enjoy the same,—a privilege, we are quite sure, that will be thoroughly appreciated.

The Commissioners have not only kept pace during the past year with demands for new mains and connections, but as means allowed, have bettered the service by replacing the six-inch main on Twelfth Street from State to Chestnut Street with a twelve-inch main, which now gives a main of the latter size as far west as Poplar Street; and have also increased the water supply on State Street about three-fold, by laying an eight-inch main from North Park Row to Eleventh Street, which will be extended next spring to Twelfth Street; at the same time placing upon these lines the most improved fire hydrants, thus affording the chief manufacturing street, and our main business thoroughfare additional and much needed fire protection.

The first and most important improvement now demanding our attention is the matter of new boilers. Four of the six have been in constant use for more than sixteen years, and investigation has shown that their condition is such that they ought not to be longer used in a plant of this character where an accident would be nothing short of a calamity.

The boiler house and smoke stack being of insufficient size for present demands, to say nothing of future increase, has rendered it advisable to build a larger boiler house, and to install, at least, four new boilers, which are to be of the most improved type, thus securing better and more economical results, utilizing the two newer ones now in commission, and making the building large enough for other boilers in the future, using the surplus room,

in the meantime, for the storage of coal, as we have facilities at present for taking care of but little more than a ten days supply.

This work, which we consider of the deepest importance, and which has only been delayed on account of the intake pipe extension, must be undertaken at once, and having been accomplished, it is then our purpose to recognize the urgent demand from the great manufacturing plants in the southeastern part of the City for larger mains, not only for better fire protection and service, but at the same time affording an improved circulation and consequently better water for domestic purposes in that locality.

It is our plan to afford the aid asked for, first, by extending the twelve-inch main on East Avenue, northwardly from Twenty-first Street to Twelfth Street; thence westwardly on Twelfth to Wayne, and secondly, to replace with a twelve-inch main the four-inch main now in Parade Street, from Seventh to Twelfth Street.

The Commissioners have long felt the justice of the claims of citizens of South Erie for a better pressure and more efficient water supply, and it is their earnest desire to give the necessary relief to that section as soon as possible. The construction of another reservoir on Nicholson's hill or the Reed farm (to which reference has already been made) would, satisfactorily, meet the difficulties under which they labor.

It would be impossible for anyone to come in close touch with the needs and requirements of the Water Department, without realizing what an important factor it is in the life and make-up of a community; and while we are of the opinion that all the surplus revenue might well be expended for several years to come in the betterment of the plant and in the direction of providing for our citizens the great blessing of "a full supply of pure and wholesome water," upon which the health and prosperity of a people so largely depend, yet, we recognize to a certain extent the justness of the claim that a portion of the net earnings should annually be paid towards the liquidation of the debt incurred in the erection of the works; and it is our purpose, after having completed the two important enterprises herein referred to, to arrange our expenditures so that we shall be able to pay at least \$25,000.00 annually to the Sinking Fund Commissioners for that purpose. It should be borne in mind, however, that the Department has furnished and is still furnishing free water for more than five hundred fire hydrants which have been erected and maintained at its own expense; besides supplying the parks, city building, engine houses, etc., to the value of more than \$26,000.00 annually,—a sum equivalent to the interest on the Water Works' debt.

The Commissioners note with satisfaction that steps are being taken for an audit of the accounts of this Department. For years

we have asked that such an audit be made, but the former Controller declined to undertake the task on the ground of insufficient help. It will be our desire and pleasure to afford every facility for the accomplishment of this work.

The number of Meters has been very largely increased within the past few years, and while their cost has been considerable, the investment has amply repaid in the curtailment of wastage, which in some instances was enormous ; and, we are now pumping less water and getting more money for it, as the following table of comparison will show :

	GALLONS PUMPED.	RECEIPTS FOR SAME.
1892	2,047,993,505	\$105,527.03
1896	2,005,757,728	\$121,442.94

The pumpage of water in 1892 was 127 gallons daily, for every man, woman and child in the city, while it was 108 gallons per capita, daily, in 1896, and even this quantity is, at least, double what it should be.

The larger part of this great saving is attributed to the use of Meters in establishments which had hitherto paid by assessment.

It should be mentioned in this connection, that the reduction, three years ago, of meter rates (then ranging from 6 to 10 cents) to a uniform rate of 6 cents per 1,000 gallons, caused a shrinkage of \$5,000 annually in this class of accounts, but the Commissioners not only felt justified in this action, in order that all manufacturers be placed upon the same basis, but they incline to the opinion that a still further reduction should be made in the meter rate as soon as circumstances will admit of it.

In presenting this report, marking as it does a period of thirty years in the history of the Department, more than ordinary attention has been paid to its preparation and compilation, and we trust the same will be favorably received and appreciated.

The property under our care is in first-class shape and condition, with exception of the boilers referred to, and it is our pride and pleasure to keep everything in a neat, clean and orderly manner, so that no one need be ashamed to take their friends and visitors to the pumping station or reservoir, which are everywhere considered among places of interest ; and while we do not claim to have done more than our duty, which we have endeavored to perform faithfully and conscientiously, we believe the Erie Water Department will compare favorably with many of the best-managed institutions of like character in other parts of the country.

Yours respectfully,

T. W. SHACKLETT,	}	Commissioners of Water Works, in the City of Erie.
WM. HARDWICK,		
CLARK OLDS,		

JOHN C. SELDEN,
COMMISSIONER.
1868-1871.

HISTORY OF WATER WORKS AT ERIE, PENN'A.

ERIE, PA., Dec. 31, 1896.

To the Commissioners of Water Works in the City of Erie, Pa.

GENTLEMEN:—At your request I submit the following account of the first water introduced into the then Borough of Erie and of the construction of the present Water Works.

From the settlement of the town up to 1841 the only water for fire purposes was the wells; and the streams running through the town. In 1841 wooden pipes were laid to the springs on the Reed farm south of Eighteenth street and tanks built in the streets near the street corners, which were kept filled by the pipes. This spring water was also used to a small extent for house use.

The records show that on April 16th, 1841, a petition was presented to the Councils by the Hon. Thos. H. Sill and others asking Councils "to take immediate measures to bring water into the Borough as a protection against fire." On June 11th Councils authorized the Town Clerk "to advertise for bids for bringing the water into town in wooden logs."

On June 22d Rufus S. Reed and Thos. G. Colt were appointed a committee "to enquire for what amount they could get the water brought into town from the Reed springs;" and June 25th, the same committee was authorized "to contract for bringing the water into town in wooden logs and devise ways and means to defray the expense."

The work was completed during the summer and fall of 1841, as the last record of payment to the contractors was November 27, 1841. These Water Works were in operation until the completion of the present works; but were very inefficient and afforded protection to only a small portion of the city. There was some discussion of new Water Works in 1865 and 1866, and on February 11, 1867, Mr. Jno. M. Kuhn introduced a resolution to ask the Legislature "to authorize the Councils of the City of Erie to issue bonds for three hundred thousand dollars to be appropriated

to the erection of Water Works." The resolution was lost, only two members of the Council, Messrs. Kuhn and Loverin, voting for it.

Previous to this date a Water and Gas Company had been organized in the city, and on March 11, 1867, the Mayor was authorized by the Councils to enter into a contract with the said company to furnish the city fifty fire plugs for the term of twenty years for nine thousand dollars per year, being \$180.00 per plug per year.

This contract provided that the city might purchase the works of the Water and Gas Company, at any time within five years, by paying the said company cost and interest, and it also provided that if the city commenced the erection of Water Works within one year the contract was to be null and void; but the city to pay the Water and Gas Company any amount expended by them and interest. Fortunately for the interests of the city they did commence the construction of Water Works within the year, for at the rate agreed upon in that contract the city would now be paying the Water and Gas Company nearly \$90,000.00 per year for fire and other purposes, and its citizens would be paying largely increased rates.

On February 23, 1867, the Councils, in joint session, approved a bill, presented by Judge Vincent, to be presented to the Legislature authorizing the city to construct Water Works, and directed the clerk to certify the action of Councils to our Senator and Representatives and request that the same be enacted and become a law.

The act authorizing the City of Erie to construct water works, and empowering the Judges of the Court of Common Pleas to appoint three Water Commissioners to construct and operate said works, passed the Legislature and was approved by the Governor April 4, 1867.

At the May term, of 1867, Judge Vincent appointed Wm. L. Scott for one year, Henry Rawle for two years and myself for three years as Water Commissioners for the City of Erie, and on the 14th day of June we met and organized the commission and appointed Wm. Brewster secretary.

Previous to this the Water and Gas Company had engaged Mr. H. P. M. Birkinbine, of Philadelphia, to make them a plan and estimate of Water Works, and this plan formed the basis of the plan of the present work. But after visiting Buffalo, Cleveland, Detroit and Pittsburg the Commissioners decided to dispense with a stand pipe and adopt the Detroit plan of a tower and tank, and on July 22, 1867, they so reported to Councils and asked for an appropriation of \$250,000.00 which request was approved by Councils and the bonds ordered issued and delivered to the Water Commissioners as they were needed in the construction of the Works.

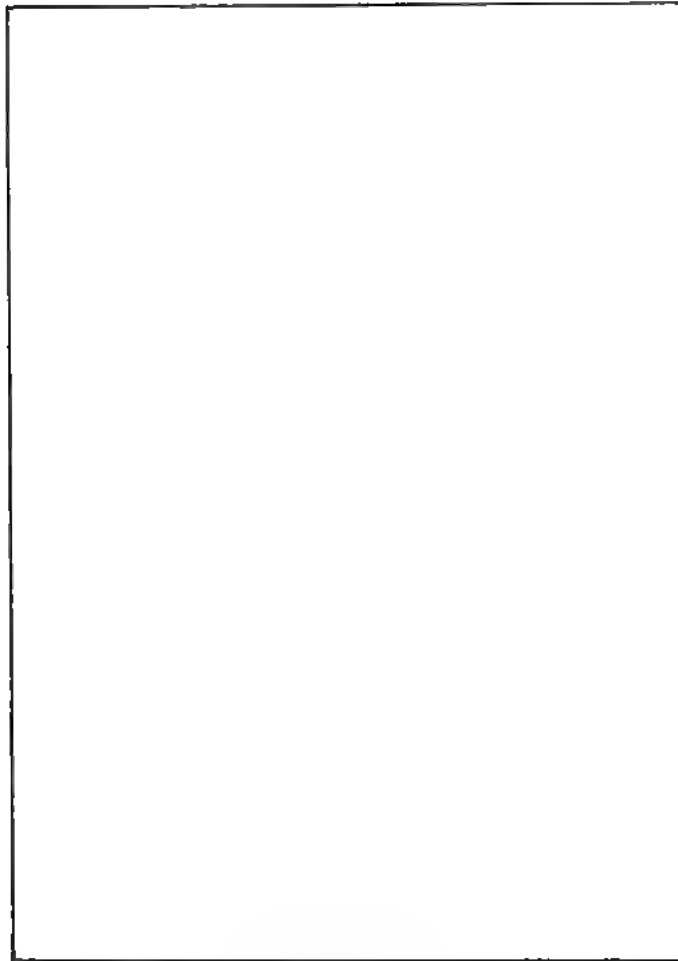
Subsequently the Commissioners decided to make all the work done by them a part of a general plan that in the future would supply South Erie, then a borough, and abandoned the tower and tank plan and adopted the stand pipe plan.

On September 27, 1867, the Mayor and a committee of the Councils met the Water Commissioners and fixed the price of the bonds at 85 cents on the dollar, and on September 28th the Commissioners made a requisition on the Councils for \$50,000.00 of bonds sold to General C. M. Reed. This was the first sale of all bonds, of which were sold at 85 cents, except about \$15,000.00 which a Committee of Councils authorized the sale of at 80 cents on April 20, 1869.

The price of the bonds was fixed by the city and for the heavy loss from discount on them the Commissioners were in no way responsible, and if previous to, and during, the construction of the works the city finances had been properly managed, and its interest and liabilities promptly paid in cash, the bonds could readily have been sold at par.

On November 16, 1867, the Commissioners applied to Councils for water lots 136 to 140 inclusive, and the request was granted, and on the same day the bid of M. C. Boyer & Co., for two Cornish Bull Engines, and boilers and pumps complete for the sum of \$55,000.00 was accepted.

On December 16, 1867, the contract for the stand pipe was let to the Erie City Iron Works, and it was erected in place the following summer.



**MATTHEW R. BARR,
COMMISSIONER.
1872-1876.**

This work, raised in place by a new and ingenious plan devised by the late Geo. Selden, Esq., deserves fuller notice. A strong derrick, about sixty feet high, was built and securely guyed. This was planked over the top, and about twelve feet from the bottom, and in the center a circle was cut out large enough to let the pipe pass through; then with heavy tackle the pipe was raised as each ring was riveted and another ring slipped under the pipe, commencing with the top ring and finishing with the bottom ring of the pipe. After the pipe projected above the derrick, guys were put on it and kept taut, except when loosened to raise the pipe to slip under another ring. The critical time, after the pipe projected from one hundred to one hundred and sixty feet above the derrick, was in slackening the guys to raise the pipe and slip under another ring. But the work was done without an accident and delivered to the Commissioners in better condition than if subjected to the strains incident to the usual way of erecting stand pipes.

On January 15, 1868, the engine house, boiler house and stack, and the masonry and brick work of the stand pipe, was let to John M. Kuhn and completed in the summer of that year, except the brick work of the stand pipe, which was built the following year.

During 1867, and the following year, there was considerable opposition developed against taking the water from the Bay. Some persons insisting that we should take the water from the springs and streams south of the city. Others that we should go to Lake Pleasant. My answer to the first proposition was that in a few years the city would require much more water than it was possible to obtain from the springs and streams; and, as to Lake Pleasant, there was no evidence that its waters were any purer than those of the Bay; that it would cost a large amount more to bring the water from Lake Pleasant than to establish pumping works to pump it from the Bay, and that the act under which the Commissioners were appointed required them to take the water from the Lake or Bay, and that they had no authority to take the water from either the springs or Lake Pleasant, and would be individually liable for every dollar they expended on either of these projects.

In the fall of 1867 bids were advertised for 800 tons of pipe of various sizes and the necessary bends, T's and crosses, but the lowest bid being \$79.00 per ton, none of the bids were accepted and subsequently the Commissioners made a contract for the pipe with Walter J. F. Liddell at \$78.25 per ton, he agreeing to start pipe works and make the pipe in Erie.

During the summer and fall of this year the city was engaged in laying Nicholson pavement around the Parks, and pipe was obtained through the Erie Gas Company, and the pipe laid and house connections put in around the Park, and also on Peach street, between the Parks and Twelfth street.

The timber crib for the inlet was let to James Dunlap and completed in the summer of 1868, and the Pumping Works were completed and put in operation in November, 1868.

May 2, 1870, the Commissioners reported to Councils in favor of the building of a Reservoir and suggested the purchase of the only available site, that of Cochran's woods.

It was in 1872 that the first State Fair was held in Erie, and a pipe had been laid from Eighteenth street to the Fair Grounds to supply water during the Fair, when one day Mr. Kincaid reported to me that the valve chamber of the west engine had broken and he had started up the east engine. I telegraphed Mr. Birkinbine to have Boyer cast another valve chamber as quickly as possible. A week or two afterwards Mr. Kincaid came to my house one Sunday forenoon and told me the other valve chamber was broken. I went at once to the Works and found a crack started in the valve chamber, but not as bad a one as in the west engine valve chamber, and ordered him to unload the engine to 60 pounds to the square inch and start it up. He protested that if I had the engine started the valve chamber would smash up. I told him it would be no worse for the city to be out of water with both engines smashed than to have one smashed and we afraid to run the other, and to start her up on a pressure of 60 pounds. This gave us pressure sufficient to supply the Fair Grounds and we continued to run the engine until after the close of the Fair, it being late in the fall when we got a new valve chamber in the west engine.

These expensive breakages were the result of an error in construction. The valve chamber was bedded on the rock and the air chamber was seated on a brick wall and connected with the valve chamber with flanges and bolts. The constant jar of the engine had settled the brick work and the air chamber and several tons of pumping main was hanging on the flanges with which they were bolted to the valve chamber.

In replacing the valve chambers I changed the plan and connected the valve and air chambers with a lead joint that allowed for settling, and also put stone caps on the brick piers, and with these improvements there is no probability of a similar accident to these engines.

About this time there was a committee of leading citizens formed to suggest improvements in the City Charter. I went before the committee and urged them to recommend an amendment authorizing the Water Commissioners to levy a tax of 75 cents per foot on each side of all streets on which pipe had been, or might hereafter be laid, urging on them the impracticability of the city furnishing money to lay pipe on all the streets on which there were calls for pipe and the rank injustice of taxing those to whom the facilities of obtaining water were denied, to pay for the pipe laid in the streets on which their more fortunate neighbors lived. But I found it impossible to get the consent of the committee to such a proposition.

I also suggested that the President of the Commission be a salaried office, and he be paid \$2,000.00 per year, and give his entire time to the supervision of the Works, and the other Commissioners be paid as at present. They asked me if I was fixing up a berth for myself. I told them I was advising what I thought for the best interests of the city and pledged myself to resign on the day such a provision became a law.

These are the only amendments, so far as I know, that were ever proposed to the act authorizing the Water Commission, and unfortunately, as I think, for the city, they were not favorably received.

In September, 1872, the Councils appropriated \$125,000.00 for the construction of a Reservoir, and the timber was cleared off that

fall, and the Reservoir constructed the next year, with the exception of sodding the slopes, which was finished in 1874.

With the completion of the Reservoir the Works were practically completed on the original plan, and there only remained the annoying question of pipe extension which I hope has not given the Commissioners as much trouble in later years as it did during the twelve years I was connected with the Commission.

My associates on the Commission were Wm. L. Scott, Henry Rawle, John C. Selden. John Gensheimer, M. R. Barr, Michael Liebel and J. M. Bryant.

Respectfully yours, etc.,

WM. W. REED.

Commissioners of Water Works, in the City of Erie, and Officers, from Organization to Dec. 31, 1896.
The Commissioners of Water Works, in the City of Erie are appointed by the Court of Common Pleas of Erie County, Pa., for a term of three years, one member being named annually, in May.

Commissioners.		President.	Secretary & Treasurer.	Assistant Secretary.
1867 *W. L. Scott,	Henry Rawle,	Wm. W. Reed,	Wm. Brewster,	.....
1868 *John C. Selden,	Henry Rawle,	Wm. W. Reed,	Wm. Brewster,	.....
1869 *John C. Selden,	Henry Rawle,	Wm. W. Reed,	*J. C. Perkins,	.....
1870 *John C. Selden,	Henry Rawle,	Wm. W. Reed,	*J. C. Perkins,	.....
1871 *John C. Selden,	Henry Rawle,	Wm. W. Reed,	*J. C. Perkins,	.....
1872 Matthew R. Barr,	John Gensheimer,	Wm. W. Reed,	*J. C. Perkins,	.....
1873 Matthew R. Barr,	John Gensheimer,	Wm. W. Reed,	*J. C. Perkins,	.....
1874 Matthew R. Barr,	John Gensheimer,	Wm. W. Reed,	*J. C. Perkins,	.....
1875 Matthew R. Barr,	John Gensheimer,	Wm. W. Reed,	*J. C. Perkins,	.....
1876 Matthew R. Barr,	John Gensheimer,	Wm. W. Reed,	*J. C. Perkins,	.....
1877 Michael Liebel,	John Gensheimer,	Wm. W. Reed,	*J. C. Perkins,	.....
1878 Michael Liebel,	*J. M. Bryant,	Wm. W. Reed,	*J. C. Perkins,	.....
1879 Michael Liebel,	*J. M. Bryant,	*G. W. F. Sherwin,	B. F. Sloan,	.....
1880 Michael Liebel,	*J. M. Bryant,	*G. W. F. Sherwin,	B. F. Sloan,	.....
1881 Michael Liebel,	Benjamin Whitman,	*G. W. F. Sherwin,	B. F. Sloan,	.....
1882 Michael Liebel,	Benjamin Whitman,	*G. W. F. Sherwin,	B. F. Sloan,	.....
1883 Michael Liebel,	Benjamin Whitman,	*G. W. F. Sherwin,	B. F. Sloan,	.....
1884 Michael Liebel,	Benjamin Whitman,	*G. W. F. Sherwin,	B. F. Sloan,	.....
1885 Michael Liebel,	Benjamin Whitman,	Benjamin Whitman,	B. F. Sloan,	Geo. C. Gensheimer,
1886 C. Kessler,	Benjamin Whitman,	Benjamin Whitman,	B. F. Sloan,	Geo. C. Gensheimer,
1887 C. Kessler,	C. J. Brown,	Geo. W. Starr,	B. F. Sloan,	Geo. C. Gensheimer,
1888 C. Kessler,	C. J. Brown,	Geo. W. Starr,	B. F. Sloan,	Geo. C. Gensheimer,
1889 C. Kessler,	C. J. Brown,	Geo. W. Starr,	B. F. Sloan,	Geo. C. Gensheimer,
1890 C. Kessler,	C. J. Brown,	Geo. W. Starr,	B. F. Sloan,	Geo. C. Gensheimer,
1891 C. Kessler,	C. J. Brown,	Wm. Hardwick,	Wm. Himrod,	Geo. C. Gensheimer,
1892 T. W. Shacklett,	C. J. Brown,	Wm. Hardwick,	Wm. Himrod,	Geo. C. Gensheimer,
1893 T. W. Shacklett,	C. J. Brown,	Wm. Hardwick,	Wm. Himrod,	Geo. C. Gensheimer,
1894 T. W. Shacklett,	C. J. Brown,	Wm. Hardwick,	Wm. Himrod,	Geo. C. Gensheimer,
1895 T. W. Shacklett,	*C. J. Brown,	Wm. Hardwick,	Wm. Himrod,	Geo. C. Gensheimer,
1896 T. W. Shacklett,	Clark Olds,	Wm. Hardwick,	Wm. Himrod,	Geo. C. Gensheimer,

* Dead.
† Mr. Selden resigned before the expiration of his second term; Mr. Barr was substituted by the other Commissioners, and afterwards appointed by the Court.
‡ C. J. Brown resigned December 28, 1895, having been elected Treasurer of Erie County, Pa. Clark Olds was chosen by the other Commissioners, for the unexpired term, on the recommendation of the Court, January 2, 1896.
Note.—Mr. Brewster was elected June 14, 1867; resigned October 20, 1868; served 1 year, 4 months and 12 days. Mr. Perkins was elected June 14, 1867; resigned March 30, 1878; same accepted December 21, 1878, to take effect January 1, 1879; served 10 years, 2 months and 5 days. Mr. Sloan was elected January 1, 1879; continued in office to June 1, 1891; served 12 years and 5 months. Mr. Himrod was appointed Secretary May, 23, 1891, to take effect June 1, 1891. Mr. Gensheimer was appointed Assistant Secretary January, 26, 1884.

Monthly Receipts from all Sources During the Year Ending December 31, 1896.

Month.	Assessment.	Meter.	Special.	Plumbing.	Building.	Total.
January.....	\$21,118 98	\$ 5,679 87	\$ 9 92	\$ 123 19	\$ 35 21	\$ 26,967 17
February	2,428 71	356 77	6 26	38 95	15 42	2,846 11
March.....	270 50	15 47	6 25	7 33	54 77	354 32
April.....	21,221 55	5,062 85	28 42	12 31	91 66	26,416 79
May... ..	2,469 26	480 76	21 70	53 56	107 23	3,132 51
June.....	464 70	535 28	18 17	12 32	94 74	1,125 21
July.....	21,963 84	4,970 36	17 98	36 83	37 48	27,026 49
August.....	2,014 39	710 43	19 40	3 81	51 41	2,799 44
September.....	247 17	123 78	73 22	44 47	167 37	656 01
October	21,390 27	5,697 61	24 59	99 69	51 20	27,263 36
November,.....	2,583 25	94 77	16 17	29 92	49 84	2,773 95
December.	79 81	404 62	43 23	39 99	16 30	583 95
Total.....	\$96,252 43	\$24,132 57	\$285 31	\$502 37	\$772 63	\$121,945 31

Receipts from Each Ward During the Year Ending December 31, 1896.

Ward.	Assessment.	Meter.	Special.	Plumbing.	Building.	Total.
First.....	\$12,903 43	\$ 3,385 05	\$ 31 62	\$ 16 66	\$ 65 44	\$ 16,402 20
Second.....	21,124 23	11,574 38	52 68	72 47	176 54	33,000 30
Third	23,491 20	3,745 54	101 60	160 25	205 14	27,703 73
Fourth.....	18,672 66	1,163 71	53 21	128 74	129 16	20,147 48
Fifth.....	8,658 95	2,980 52	23 50	8 69	76 97	11,748 63
Sixth.....	10,569 28	785 07	11 45	23 63	88 93	11,478 36
Seventh.....	832 68	498 30	11 25	91 93	30 45	1,464 61
Total.....	\$96,252 43	\$24,132 57	\$285 31	\$502 37	\$772 63	\$121,945 31

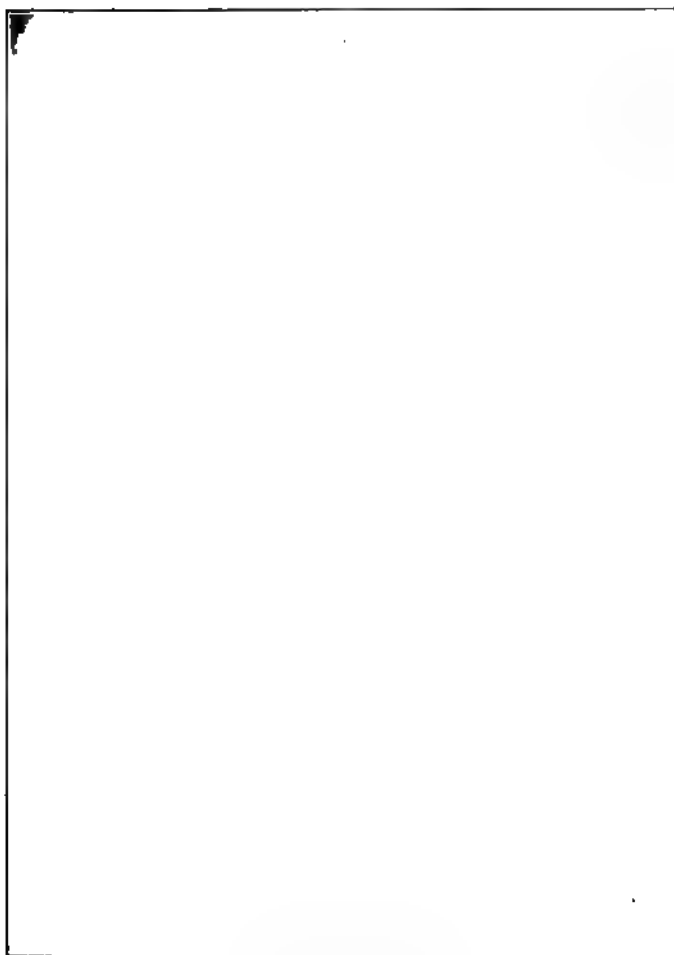
JOHN GENSHEIMER,
COMMISSIONER,
1872-1877.

Monthly Receipts from all Sources During the Year Ending December 31, 1896.

Month.	Assessment.	Meter.	Special.	Plumbing.	Building.	Total.
January.....	\$21,118 98	\$ 5,679 87	\$ 9 92	\$ 123 19	\$ 35 21	\$ 26,967 17
February	2,428 71	356 77	6 26	38 95	15 42	2,846 11
March.....	270 50	15 47	6 25	7 33	54 77	354 32
April.....	21,221 55	5,062 85	28 42	12 31	91 66	26,416 79
May... ..	2,469 26	480 76	21 70	53 56	107 23	3,132 51
June.....	464 70	535 28	18 17	12 32	94 74	1,125 21
July.....	21,963 84	4,970 36	17 98	36 83	37 48	27,026 49
August.....	2,014 39	710 43	19 40	3 81	51 41	2,799 44
September.....	247 17	123 78	73 22	44 47	167 37	656 01
October	21,390 27	5,697 61	24 59	99 69	51 20	27,263 36
November.....	2,583 25	94 77	16 17	29 92	49 84	2,773 95
December.	79 81	404 62	43 23	39 99	16 30	583 95
Total.....	\$96,252 43	\$24,132 57	\$285 31	\$502 37	\$772 63	\$121,945 31

Receipts from Each Ward During the Year Ending December 31, 1896.

Ward.	Assessment.	Meter.	Special.	Plumbing.	Building.	Total.
First.....	\$12,903 43	\$ 3,385 05	\$ 31 62	\$ 16 66	\$ 65 44	\$ 16,402 20
Second	21,124 23	11,574 38	52 68	72 47	176 54	33,000 30
Third	23,491 20	3,745 54	101 60	160 25	205 14	27,703 73
Fourth.....	18,672 66	1,163 71	53 21	128 74	129 16	20,147 48
Fifth.....	8,658 95	2,980 52	23 50	8 69	76 97	11,748 63
Sixth.....	10,569 28	785 07	11 45	23 63	88 93	11,478 36
Seventh.....	832 68	498 30	11 25	91 93	30 45	1,464 61
Total.....	\$96,252 43	\$24,132 57	\$285 31	\$502 37	\$772 63	\$121,945 31



**MICHAEL LIEBEL,
COMMISSIONER,
1877-1885.**

Cash Account of Secretary and Treasurer of Commissioners of Water Works, in the City of Erie, for the Year Ending December 31, 1896.

Month.	Receipts.	Deposited with Treasurer City of Erie.	Balance in Office at Close of Business each month.
January.....	\$ 26,967 17	\$ 24,571 51	\$2,395 66
February.....	2,846 11	5,163 23	78 54
March.....	354 32	338 11	94 75
April.....	26,416 79	23,395 87	3,115 67
May.....	3,132 51	6,200 60	47 58
June.....	1,125 21	1,044 55	128 24
July.....	27,026 49	24,959 29	2,195 44
August.....	2,799 44	4,875 64	119 24
September.....	656 01	734 56	40 69
October.....	27,263 36	23,311 94	3,992 11
November.....	2,773 95	6,659 79	106 27
December.....	583 95	690 22	.....
Total.....	\$121,945 31	\$121,945 31	.....

Statement of Account with Treasurer of the City of Erie, for the Year Ending December 31, 1896.

Month.	Received from Secretary and Treasurer Commissioners of Water Works, in the City of Erie.	Paid on Warrants of Commissioners of Water Works, in the City of Erie.	Monthly Balances.
Balance from 1895.....	\$ 4,921 45	.....	.....
January.....	24,571 51	\$ 21,202 82	\$ 8,290 14
February.....	5,163 23	7,260 04	6,193 33
March.....	338 11	715 97	5,815 47
April.....	23,395 87	11,092 37	18,118 97
May.....	6,200 60	9,476 35	14,843 22
June.....	1,044 55	13,497 51	2,390 26
July.....	24,959 29	16,391 87	10,957 68
August.....	4,875 64	13,657 70	2,175 62
September.....	734 56	2,232 83	677 35
October.....	23,311 94	11,442 67	12,546 62
November.....	6,659 79	12,325 54	6,880 87
December.....	690 22	6,935 80	635 29
Total.....	\$126,866 76	\$126,231 47	.....

JONATHAN M. BRYANT,
COMMISSIONER,
1878-1880.

Amount of Water Rents Collected Each Year, with the Increase and Decrease Since the Commencement of the Works.

YEAR.	Amount Rec'd.	Increase.	Decrease.
From Jan. 1, 1869, to Dec. 31. 1869.....	\$ 4 264 47		
" " 1870, to " 1870.....	9,237 30	\$4,972 83	
" " 1871, to " 1871.....	18,138 08	8,900 78	
" " 1872, to " 1872.....	21,652 68	3,514 60	
" " 1873, to " 1873.....	25,560 40	3,907 72	
" " 1874, to " 1874.....	27,938 90	2,378 50	
" " 1875, to " 1875.....	29,639 38	1,700 48	
" " 1876, to " 1876.....	31,048 76	1,409 38	
" " 1877, to " 1877.....	32,276 57	1,227 81	
" " 1878, to " 1878.....	29,636 01		\$2,640 56
" " 1879, to " 1879.....	33,343 20	3,707 19	
" " 1880, to " 1880.....	37,385 00	4,041 80	
" " 1881, to " 1881.....	40,385 87	3,000 87	
" " 1882, to " 1882.....	43,818 73	3,432 86	
" " 1883, to " 1883.....	48,269 89	4,451 16	
" " 1884, to " 1884.....	51,852 78	3,582 89	
" " 1885, to " 1885.....	53,550 35	1,697 57	
" " 1886, to " 1886.....	58,725 00	5,174 65	
" " 1887, to " 1887.....	67,121 92	8,396 92	
" " 1888, to " 1888.....	73,197 03	6,075 11	
" " 1889, to " 1889.....	81,110 68	7,913 65	
" " 1890, to " 1890.....	87,279 96	6,169 28	
" " 1891, to " 1891.....	93,891 55	6,611 59	
" " 1892, to " 1892.....	105,527 03	11,635 48	
" " 1893, to " 1893.....	111,247 43	5,720 40	
" " 1894, to " 1894.....	111,821 94	574 51	*
" " 1895, to " 1895.....	116,927 63	5,105 69	
" " 1896, to " 1896.....	121,442 94	4,515 31	
TOTAL.....	\$1,566,291 48		

* Meter rates for water changed from a sliding scale of 6 cents to 10 cents per 1,000 gallons, according to amount consumed, to a flat rate of 6 cents per 1,000 gallons, causing a reduction in receipts of \$5,000.00.

RATES FOR CITY WATER.

Approved by Select Council Aug. 19, 1895. Approved by Common Council Sept. 16, 1895.
Approved by the Mayor Sept. 21, 1895.

ALL ARE ANNUAL EXCEPT AS OTHERWISE INDICATED, AND PAYABLE QUARTERLY IN ADVANCE.

Air Pump.....	\$	3 00
Bath Tub—Private (one family) first tub.....		3 00
Bath Tub—Private (one family) each additional tub.....		1 50
Bath Tub—Public, each tub.....		5 00
Bakery, per barrel of flour used (but no charge less than \$5).....		01
Barber Shop, first chair, including hand basin.....		4 00
Barber Shop, each additional chair, including hand basin.....		2 00
Billiard Tables, each.....		1 00
Blacksmith Fire, first fire.....		5 00
Blacksmith Fire, each additional fire.....		2 50
Boarding House, (in addition to family rates) per room.....		1 00
Building Purposes, per bushel of lime; to be paid before work is begun.....		02
Butcher Stalls.....	3 00 to 15 00	
Charitable institutions, one-third annual rates.....		75
Cow.....		25
Condensing Boiler for Steam Heating, (per season of 6 months) per horse power.....	5 00 to 25 00	
Eating Houses.....		5 00
Family.....		3 00
Fire Protection Fixtures, testing same, thirty (30) minutes or less.....		5 00
Fire Protection Fixtures, testing same, one (1) hour or less, but more than thirty (30) minutes.....		5 00
Flushing Sewers, settling earth in ditches or purposes of like nature, per hour or fractional part of an hour, each.....		1 00
Hand Basins in dwellings, hotels and schools, first basin.....		50
Hand Basins in dwellings, hotels and schools, each additional basin.....		1 00
Hand Basins in offices, stores and blocks, each.....		1 00
Hotels, (in addition to family rates) per room.....		5 00
Laundry, shop.....		2 00
Laundry, wash tub, stationary, each.....		5 00
Laundry, revolving washer, each.....		2 00
Livery Stable, per horse.....	3 00 to 10 00	
Offices.....		2 00
Private Stable, one or two horses.....		1 00
Private Stable, each additional horse over two.....		5 00 to 30 00
Printing Offices.....		5 00 to 25 00
Public Halls.....		5 00 to 25 00
Saloons.....		10
School, per pupil (in addition to fixtures).....	5 00 to 50 00	
Slaughter Houses.....		1 00
Sleeping Rooms, each.....		5 00
Sprinkling Streets or Lawns with Hose, Per SEASON:		
Corner lot, 41 feet front or less.....		3 00
Inside lot, 41 feet front or less.....		05
For each additional foot front to either corner or inside lot.....		2 50
Steam Engines, ten hours per day, each Horse Power.....	3 00 to 15 00	
Stores.....		2 00
Urinal, private, self-closing (one family).....		6 00
Urinal, private, not self-closing (one family).....		3 00
Urinal, public, self-closing.....		10 00
Urinal, public, not self-closing.....	10 00 to 30 00	
Urinal, private or public, continuous flow.....		2 00
Wash Tub, stationary, first tub (one family).....		1 00
Wash Tub, stationary, each additional tub, (one family).....		3 00
Water Closet, pan or tank (one family) private.....		1 50
Water Closet, pan or tank (one family) each addition water closet.....		5 00
Water Closet, pan or tank, public, each.....		6 00
Water Closet, hopper, (one family) private, for each water closet.....		10 00
Water Closet, hopper, public, for each water closet.....	3 00 to 5 00	
Work Shop, ordinary use.....		

All other uses, when not metered, to be assessed by the Commissioners.
The sprinkling season is from May 1st to November 1st in each year.
There is no fractional part of a sprinkling season.
It will cost as much to sprinkle but once at any time during the sprinkling season as it will to sprinkle each day at the prescribed hours during the entire season.
Sprinkling must be confined to the hours between 5 and 8 A. M., 12 and 1 P. M., and 5 and 8 P. M., nor during said intervals more than one hour at a time. Persons who exceed one hour may be charged at fountain rates, or held liable for violation of the rules, at the option of the Commissioners.

Meter Rates.

Six (6) cents for each one thousand (1,000) gallons by meter measurement, <i>Provided</i> the minimum receipts per quarter shall be for a		
¾-inch or less.....	\$3 75	2-inch.....\$10 00
1-inch.....	4 50	3-inch.....18 75
1½-inch.....	6 25	4-inch.....38 75

Statement of Warrants Issued in 1896.

January.

TO PAY VOUCHER.

Date.	No.	Of	For	Amount.
4	7696	Wm. F. Nick.....	Oil.....	\$ 1 70
	7697	C. Kessler.....	Lye and mop handles.....	2 10
	7698	Thomas Pickering.....	Carriage hire.....	10 50
	7699	E. J. Riblet.....	Shop rent (for January, 1896).....	20 00
	7700	E. McK. Whitley.....	Coke and coal.....	26 10
	7701	James L. Firman.....	Cats and corn.....	26 68
	7702	Pay Roll—Street Work.....	Disbursed by M. L. Whitley, Clk.....	308 28
	7703	The Addyston Pipe & Steel Co.....	Sixty-inch pipe.....	5,000 00
11	7704	Pay Roll—Street Work.....	Disbursed by M. L. Whitley, Clk.....	149 25
	7705	The Addyston Pipe & Steel Co.....	Sixty-inch pipe.....	5,000 00
18	7706	J. O. Baker.....	Work on buildings and grounds.....	5 43
	7707	A. Brugger.....	Wooden plugs.....	5 50
	7708	W. De Witt Himrod.....	Stationery.....	25 20
	7709	Pay Roll—Street Work.....	Disbursed by M. L. Whitley, Clk.....	183 41
	7710	The Addyston Pipe & Steel Co.....	Sixty-inch pipe.....	5,000 00
	7711	D. P. Murphy.....	Mason work.....	31 25
25	7712	Pay Roll—Street Work.....	Disbursed by M. L. Whitley, Clk.....	147 42
	7713	Lake Shore & M. S. Ry. Co.....	Freight.....	260 00
29	7714	The Addyston Pipe & Steel Co.....	Sixty-inch pipe.....	5,000 00
Total.....				\$21,202 82

February.

TO PAY VOUCHER.

Date.	No.	Of	For	Amount.
1	7715	Keystone Electric Co.....	Repairs and brushes.....	\$ 2 00
	7716	Times, Graphic & Observer.....	Advertising.....	4 00
	7717	Herald Ptg. & Pub. Co.....	Advertising.....	5 00
	7718	Held, Gorenflo & Co.....	Advertising.....	5 00
	7719	Flickinger Roof. & Cor. Co., Lt'd..	Torches and zinc.....	5 70
	7720	James L. Firman.....	Teaming.....	7 12
	7721	J. N. Blaisdell.....	Shoeing horses.....	8 00
	7722	J. O. Baker.....	Material and labor.....	8 54
	7723	E. McK. Whitley.....	Coal.....	10 00
	7724	Erie Dispatch.....	Advertising and Paper.....	10 00
	7725	Ashby & Vincent.....	Books.....	10 25
	7726	Edison Construct. & Supply Dept..	Lamps, etc.....	11 01
	7727	A. S. Pinney.....	Hardware.....	14 46
	7728	E. J. Riblet.....	Shop rent (for February, 1896).....	20 00
	7729	Geo. C. Gensheimer, Asst. Secy.....	Sundries.....	21 27
	7730	South Erie Iron Works.....	Castings.....	26 19
	7731	John J. O'Brien.....	Printing.....	40 28
	7732	Erie Mfg. & Supply Co.....	Packing, gaskets, etc.....	45 10
	7733	R. D. Wood & Co.....	Valve stems.....	48 00
	7734	N. Y. & P. Telephone & Tel. Co.....	Telephone Rentals.....	54 25
	7735	Globe Iron Foundry Co.....	Castings.....	54 72
	7736	Atlantic Refining Co.....	Oil.....	62 56
	7737	Bay State Iron Works, Lt'd.....	Repairing boilers.....	92 45
	7738	Chas. S. Clarke, Postmaster.....	Postal cards.....	100 00
	7739	Hays Manufacturing Co.....	Brass couplings and fittings.....	120 87
	7740	Erie Machine Shop.....	Repairs of Engine and Boilers.....	135 53
	7741	Robt. J. Saltzman.....	Coal.....	305 94
	7742	Pay Roll—Pumping Station.....	Disbursed by Geo. C. Gensheimer, Assistant Secretary.....	580 00
	7743	Pay Roll—Office and Inspectors....	Disbursed by Geo. C. Gensheimer, Assistant Secretary.....	1,041 66

REPORT OF THE COMMISSIONERS OF

February—Continued.

TO PAY VOUCHER.

Date.	No.	Of	For	Amount.
1	7741		Oil	\$ 26 00
8	7745		Disbursed by M. L. Whitley, Clerk ..	184 25
8	7746		Sundries ..	31 16
15	7747		Disbursed by M. L. Whitley, Clerk ..	158 24
21	7748		Disbursed by M. L. Whitley, Clerk ..	150 90
21	7749		Mason work ..	66 75
25	7750		Disbursed by M. L. Whitley, Clerk ..	182 12
25	7751		Hay ..	29 84
25	7752		Lanterns ..	2 15
25	7753		Oil and paint ..	2 70
25	7754		Horse hire ..	3 00
25	7755		Motor repairs ..	3 50
25	7756		Repairs and brushes ..	3 75
25	7757		Extension dials ..	4 00
25	7758		Plumbing ..	4 80
25	7759		Shoeing horses ..	6 00
25	7760		Castings ..	6 31
25	7761		Hardware ..	8 01
25	7762		Extension dials ..	9 00
25	7763		Sheet copper ..	10 40
25	7764		Hay and straw ..	10 78
25	7765		Sole Leather ..	13 50
25	7766		Material & labor, Eng. House No. 2 ..	15 33
25	7767		Stationery ..	15 55
25	7768		Packing, etc ..	18 60
25	7769		Shop rent ..	20 00
25	7770		Fire brick and clay ..	33 50
25	7771		Injector ..	33 95
25	7772		Sundries ..	47 49
25	7773		Lead pipe and wiping solder ..	74 05
25	7774		Cocks and fittings, etc ..	97 82
25	7775		Oil ..	30 20
25	7776		Repairs on Boilers and Engines ..	118 33
25	7777		Repairs on Boilers and Engines ..	130 43
25	7778		Services as Commissioner ..	150 00
25	7779		Services as Commissioner ..	150 00
25	7780	Clark Olds ..	Services as Commissioner ..	150 00
25	7781	Herald Ptg. & Pub. Co.	Printing and cuts - Annual Report ..	215 46
25	7782	Robt. J. Saltsman ..	Coal ..	333 49
25	7783	Pay Roll—Street Work ..	Disbursed by M. L. Whitley, Clk ..	157 62
25	7784	Pay Roll—Pumping Station ..	Disbursed by Geo. C. Gensheimer, Assistant Secretary ..	501 38
25	7785	Pay Roll—Office and Inspectors ..	Disbursed by Geo. C. Gensheimer, Assistant Secretary ..	1,041 66
Total				\$ 7,230 04

March.

TO PAY VOUCHER.

Date.	No.	Of	For	Amount.
7	7786	Henry Mayo & Son	Leather ..	\$ 3 00
7	7787	Wm. Sebade & Co.	Blacksmith work ..	3 20
7	7788	Ashby & Vincent ..	Book covers and lettering ..	6 55
7	7789	Dispatch Ptg. & Eng. Co., Ltd ..	Printing ..	16 00
14	7790	Pay Roll—Street Work ..	Disbursed by M. L. Whitley, Clk ..	151 60
14	7791	George C. Gensheimer, Asst. Sec ..	Sundries ..	18 46
14	7792	Pay Roll—Street Work ..	Disbursed by M. L. Whitley, Clk ..	146 38
21	7793	Pay Roll—Street Work ..	Disbursed by M. L. Whitley, Clk ..	174 60
28	7794	Pay Roll—Street Work ..	Disbursed by M. L. Whitley, Clk ..	196 18
Total				\$ 715 97

April.

TO PAY VOUCHER.

<i>Date.</i>	<i>No.</i>	<i>Of</i>	<i>For</i>	<i>Amount.</i>
1	7795	Pay Roll—Pumping Station.....	Disbursed by Geo. C. Gensheimer, Assistant Secretary	\$ 580 00
	7796	Pay Roll—Office and Inspectors....	Disbursed by Geo. C. Gensheimer, Assistant Secretary	1,049 35
4	7797	Saltsman & Austin.....	Sewer pipe.....	1 11
	7798	Thomas Pickering.....	Horse and wagon.....	1 50
	7799	Union Water Meter Co.....	Register extension.....	1 50
	7800	E. McK. Whitley.....	Coke.....	1 90
	7801	Mehl & Sapper	Hardware.....	2 70
	7802	Hollands Manufacturing Co.....	Die and Jaw.....	2 49
	7803	George Schlindwein.....	Harness repairs, etc	2 50
	7804	Flickinger Roof. & Cor. Co., Lt'd..	Sheet Copper.....	2 58
	7805	O. C. Thayer & Son.....	Sewer pipe.....	2 83
	7806	F. R. Simmons.....	Tallow.....	2 88
	7807	Fire and Water	One year's subscription.....	3 00
	7808	C. Kessler.....	Brooms.....	3 25
	7809	Edison Electric Light & Power Co..	Light at shop.....	3 42
	7810	Burdett Organ Co., Lt'd.....	Water rent returned.....	3 75
	7811	The Engineering News Pub. Co....	One year's subscription.....	5 00
	7812	J. O. Baker.....	Repairs on boat, etc.....	7 28
	7813	Constable Bros.....	Material and labor, Engine No. 4.....	7 39
	7814	J. N. Blaisdell.....	Shoeing horses.....	7 40
	7815	Wm. F. Nick & Son.....	Oil, paint, varnish, etc.....	9 35
	7816	T. S. Buck.....	Rubber stamps, etc.....	9 70
	7817	Edison Construct. & Supply Dept..	Lamps, etc.....	10 40
	7818	A. S. Pinney.....	Hardware.....	11 12
	7819	H. F. Watson Co.....	Paper, covering, etc.....	11 25
	7820	Gingrich & Ohmer.....	Oats	14 00
	7821	E. J. Riblet.....	Shop rent (for April, 1896).....	20 00
	7822	Erie Machine Shop.....	Repairing Boilers.....	22 28
	7823	Robt. T. Walker	Barn rent.....	30 00
	7824	John Hamberger.....	Insurance.....	34 00
	7825	Henry R. Worthington.....	Valves.....	49 69
	7826	F. P. Gill	Pattern and machine work.....	55 70
	7827	Atlantic Refining Co.....	Oil.....	68 22
	7828	National Meter Co.....	Meters.....	90 00
	7829	Erie Mfg. & Supply Co.....	Hose, Packing, Waste, etc.....	108 33
	7830	Hays Manufacturing Co.....	Brass couplings, fittings, etc.....	126 40
	7831	Pay Roll—Street Work.....	Disbursed by M. L. Whitley, Clk.....	267 14
	7832	Robt. J. Saltsman.....	Coal.....	473 80
	7833	The Addyston Pipe & Steel Co.....	Sixty-inch pipe.....	4,605 70
11	7834	Geo. C. Gensheimer, Asst. Sec.....	Sundries.....	14 78
	7835	Pay Roll—Street Work.....	Disbursed by M. L. Whitley, Clk.....	311 27
13	7836	J. O. Baker.....	Row boat.....	70 00
18	7837	Pay Roll—Street Work.....	Disbursed by M. L. Whitley, Clk.....	317 29
25	7838	Geo. C. Gensheimer, Asst. Sec.....	Sundries.....	65 30
	7839	Pay Roll—Street Work.....	Disbursed by M. L. Whitley, Clk.....	407 81
	7840	National Tube Works.....	1/4 inch galvanized pipe.....	484 35
29	7841	Pay Roll—Pumping Station.....	Disbursed by Geo. C. Gensheimer, Assistant Secretary	580 00
	7842	Pay Roll—Office and Inspectors....	Disbursed by Geo. C. Gensheimer, Assistant Secretary	1,041 66
Total				\$11,092 37

WILLIAM BREWSTER,
SECRETARY AND TREASURER,
1867-1868.

WATER WORKS, IN THE CITY OF ERIE.

33

May.

TO PAY VOUCHER.

Date.	No.	Of	For	Amount.
2	7843		Repairs, whip, etc.	\$ 1 20
			One year's subscription	2 00
			Oil	2 15
			Putting Meter on sprinkling cart	2 50
			Putting Meter on sprinkling cart	2 50
			Hardware	2 50
			Brushes	3 00
			Coke	3 20
			Stationery	4 10
			Cement	4 20
			Hose couplings, etc.	4 45
			Lamps	4 80
			Gravel	5 05
			Shoeing horses	5 40
			Soap and tallow	7 54
			Paints, oil, etc.	7 73
			Counter Extensions	7 95
			Castings	8 08
			Hoods for Boilers	8 15
			Repairing pavements	9 47
			Old rope	10 00
			Teaming	10 35
			Onia	13 50
			Stationery	13 50
			Fertilizer	16 70
			Shop rent (for May, 1896)	20 00
			Hose, Lawn mower, etc.	26 70
			Motor box and material	28 69
			Hardware	37 39
			Lamps	42 50
			Repairs, Boiler and Engine	44 13
			Oil	111 72
			Services as Commissioner	150 00
			Services as Commissioner	150 00
			Services as Commissioner	150 00
			Coal	365 32
			Curb, cocks, pipe, fittings, etc.	428 75
			Fire hydrants and Valves	608 52
			Disbursed by M. L. Whitley, Clk.	618 49
			Advertising	5 00
			Advertising	5 00
			Advertising	5 00
			Advertising and stationery	5 20
			Sundries	65 26
			Disbursed by M. L. Whitley, Clk.	852 96
			Pig lead	1,681 40
			Fertilizer	10 00
			Disbursed by M. L. Whitley, Clk.	667 57
			Sundries	13 59
			Freight	96 08
			Disbursed by M. L. Whitley, Clk.	210 56
			American Water Works Assn.	100 00
			Freight	22 78
			Drinking Fountain	83 13
			Disbursed by Geo. C. Gensheimer,	
			Assistant Secretary	580 00
			Disbursed by M. L. Whitley, Clk.	601 10
			Disbursed by Geo. C. Gensheimer,	
			Assistant Secretary	1,081 66
			Printing and stationery	21 50
			Total	\$ 9,476 35

Total \$ 9,476 35

June.

TO PAY VOUCHER.

<i>Date. No. Of</i>	<i>For</i>	<i>Amount.</i>
1	Laying sixty-inch pipe.....	\$ 8,188 07
6	Oil.....	2 00
	Valve plungers, etc.....	2 22
	Sewer pipe and Cement.....	3 64
	Ladders.....	3 81
	Old iron.....	4 80
	Boiler repairs.....	5 85
	Leather washers.....	7 50
	Oats and straw.....	7 72
	Hardware.....	8 46
	Horse shoeing and setting tire.....	10 00
	Coke and wood.....	13 10
	Water box and material.....	14 03
	Shop rent (for June, 1896).....	20 00
	Books and stationery.....	20 10
	Teaming.....	21 40
	Drawing.....	37 50
	Castings.....	41 40
	Insurance.....	50 00
	Hose, Valves, etc.....	62 53
	Clover and grass seeds.....	79 92
	Oil.....	105 84
	Meters.....	110 09
	Castings.....	160 81
	Coal.....	336 35
	Metallic packing.....	348 10
	Cocks and fittings.....	428 56
	Water box.....	8 00
	Boiler and Engine repairs.....	32 67
	Sundries.....	26 34
13	Disbursed by M. L. Whitley, Clk.....	537 65
17	Disbursed by M. L. Whitley, Clk.....	613 49
20	Water lots at Treasurer's sale.....	384 76
27	Disbursed by M. L. Whitley, Clk.....	630 28
	On contract, building Pier.....	660 00
	Work on scow.....	7 24
	Freight.....	11 91
	Freight.....	93 81
	Disbursed by M. L. Whitley, Clk.....	407 56
Total		\$13,497 51

July.

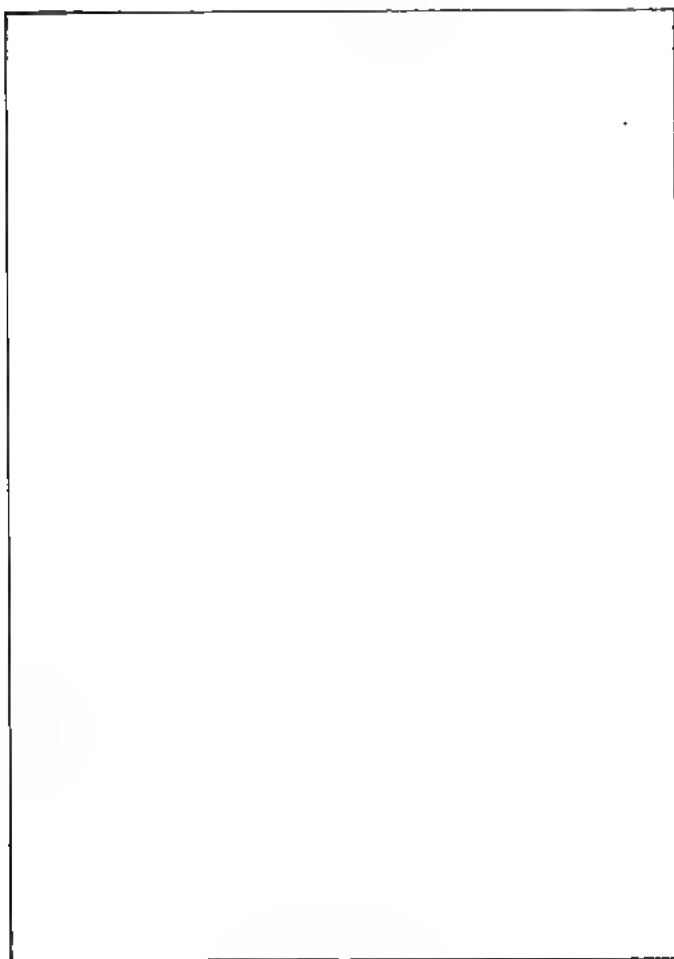
TO EAT VOUCHER.

Date.	No.	Of	For	Amount.
1	7940	Pay Roll—Pumping Station.....	Disbursed by Geo. C. Gensheimer, Assistant Secretary.....	\$ 580 00
	7941	Pay Roll—Office and Inspectors....	Disbursed by Geo. C. Gensheimer, Assistant Secretary.....	1,081 66
	7942	O. M. Halcott	Driving wells on Peninsula.....	38 00
	7943	D. P. Murphy	Mason Work.....	38 75
	7944	T. W. Shacklett.....	Services as Commissioner.....	150 00
	7945	William Hardwick.....	Services as Commissioner.....	150 00
	7946	Clark Olds.....	Services as Commissioner.....	150 00
	7947	Pay Roll—Street Work.....	Disbursed by M. L. Whitley, Clk....	906 70
11	7948	Geo. C. Gensheimer, Asst. Secy.....	Sundries.....	47 44
	7949	Pay Roll—Street Work.....	Disbursed by M. L. Whitley, Clk....	89 60
18	7950	Pay Roll—Street Work.....	Disbursed by M. L. Whitley, Clk....	408 64
	7951	Thayer & Breermann.....	Laying six-inch pipe.....	10,631 84
25	7952	Geo. C. Gensheimer, Asst. Secy.....	Sundries.....	88 79
	7953	Pay Roll—Street Work.....	Disbursed by M. L. Whitley, Clk....	462 65
	7954	Lake Shore & M. S. Ry. Co.....	Freight.....	79 16
31	7955	Pay Roll—Pumping Station.....	Disbursed by Geo. C. Gensheimer, Assistant Secretary.....	580 00
	7956	Pay Roll—Office and Inspectors....	Disbursed by Geo. C. Gensheimer, Assistant Secretary.....	1,061 66
Total.....				\$16,391 87

August.

TO PAY VOUCHER.

Date.	No.	Of	For	Amount.
1	7867		Freight.....	14 73
	7868		Disbursed by M. L. Whitley, Clk.....	562 83
3	7869		Hardware.....	1 35
	7880		Brick.....	3 00
	7881		Repairing harness.....	3 20
	7882		Tools and repairs.....	4 70
	7883		Teaming.....	5 00
	7884		Paints and oils.....	6 80
	7885		Hardware.....	6 04
	7886		Plumbing material.....	6 65
	7887		Rope.....	7 29
	7888		Brooms, mops and sundries.....	7 73
	7889		Coke and wood.....	8 50
	7890		Horse shoeing.....	8 80
	7891		Wooden plugs.....	12 80
	7892		Brick and clay.....	13 50
	7893		Teaming (done in June, 1886).....	19 25
	7894		Stone for drinking fountain.....	16 00
	7895		Material for Engine No. 4.....	29 13
	7896		Books and stationery.....	39 18
	7897		Lumber and meter boxes.....	40 73
	7898		Rental of telephones.....	54 92
	7899		Castings for meter boxes.....	66 33
	7900		Oil.....	81 75
	7901		Castings.....	82 71
	7902		Repairing Boilers.....	97 93
	7903		Repairs to Engines.....	138 25
	7904		Fittings for Connections.....	148 01
	7905		Coal, coke and wood.....	318 47
	7906		Fire hydrants and Stop Valves.....	528 01
	7907		Meters.....	409 94
	7908		Investigating currents in Bay.....	100 70
	7909		Waste and Packing.....	98 29



JOHN C. PERKINS,
SECRETARY AND TREASURER.
1869-1878.

WATER WORKS, IN THE CITY OF ERIE.

37

August—Continued.

TO PAY VOUCHER.

Date.	No.	Of	For	Amount.
14	7990		Disbursed by M. L. Whitley, Clk....	\$ 577 25
10	7991		Laying Intake No. 2.....	5,827 96
15	7992		Advertising.....	7 96
	7993		Advertising.....	10 20
	7994		Advertising.....	10 76
	7995		Hose.....	12 25
	7996		Advertising, books and stationery.....	37 90
	7997		Sundries.....	86 40
	7998		Disbursed by M. L. Whitley, Clk....	525 30
15	7999		Pig lead.....	633 41
22	8000		Glass and oil.....	2 96
	8001		Repairing wagon.....	7 25
	8002		Freight.....	12 75
	8003		Teaming.....	19 50
	8004		Oats and hay.....	41 17
	8005		Disbursed by M. L. Whitley, Clk....	459 25
29	8006		Disbursed by M. L. Whitley, Clk....	576 09
31	8007		Stationery for Engineer's Office, etc.....	4 61
	8008		Services as Commissioner.....	150 00
	8009		Services as Commissioner.....	150 00
	8010		On contract building pier.....	524 64
	8011		Disbursed by John Kolb, Bkpr.....	590 00
	8012		Disbursed by John Kolb, Bkpr.....	940 53
Total.....				\$13,657 70

September.

TO PAY VOUCHER.

Date.	No.	Of	For	Amount.
2	801		Sod.....	\$ 20 00
5	802		Sod.....	85 40
	803		Coal.....	234 14
	804		Disbursed by John Kolb, Bkpr.....	603 49
12	805		Horse shoeing and repairs to wagon.....	21 96
	806		Disbursed by John Kolb, Bkpr.....	481 22
18	807		Disbursed by M. L. Whitley, Clk....	404 73
26	808		Disbursed by M. L. Whitley, Clk....	381 90
Total.....				\$ 2,232 83

October.

TO PAY VOUCHER.

Date.	No.	Of	For	Amount.
3	8021	Pay Roll—Pumping Station,	Disbursed by Geo. C. Gensheimer, Assistant Secretary.....	\$ 540 00
	8022	Pay Roll—Office, Inspectors, etc....	Disbursed by Geo. C. Gensheimer, Assistant Secretary.....	906 66
	8023	Pay Roll—Street Work.....	Disbursed by M. L. Whitley, Clk....	485 52
10	8024	J. A. Paisley.....	Coal.....	338 85
	8025	Pay Roll—Street Work.....	Disbursed by M. L. Whitley, Clk....	555 38
	8026	Gallagher Printing Co.....	Printing.....	6 75
	8027	D. P. Gallagher.....	Mason work.....	16 60
	8028	William Crane.....	Electrical work.....	19 00
	8029	O. M. Halcott.....	Driving walks on Peninsula.....	96 50
	8030	Clark Olds.....	Services as Commissioner.....	150 00
	8031	W. F. Mason.....	Chemical analyses of water and sand.....	75 00
17	8032	T. S. Buck.....	Rubber stamp.....	1 02
	8033	Constable Bros.....	Lumber and labor.....	1 25
	8034	Keystone Brass Co.....	Repairs for Meters.....	1 94
	8035	Atlantic Refining Co.....	Oil.....	2 16
	8036	Wm. F. Nick & Son.....	Oil and paint.....	2 45
	8037	Hollands Mfg. Co.....	Tools and repairs.....	2 64
	8038	Flickinger Roof & Cor. Co., Ltd.....	Sheet copper and labor.....	2 70
	8039	Thompson Meter Co.....	Repairs to Meter.....	3 00
	8040	Erie Engine Works.....	Labor on sixty-inch pipe.....	4 00

October—Continued.

TO PAY VOUCHER.

<i>Date.</i>	<i>No.</i>	<i>Of</i>	<i>For</i>	<i>Amount</i>
17	8041	Fred Gross.....	Packing	\$ 4 25
	8042	Wm. Schade & Co.....	Blacksmithing	4 44
	8043	Ashby & Vincent.....	Stationery.....	4 50
	8044	George Schlindwein.....	Repairs to harness.....	4 55
	8045	Union Ice Co.....	Ice.....	5 00
	8046	C. Kessler.....	Sundries.....	5 11
	8047	Globe Iron Foundry.....	Castings	6 31
	8048	O. C. Thayer & Son.....	Cement and Pipe.....	6 32
	8049	Bay State Iron Works, Lt'd.....	Repairs to Boiler.....	7 30
	8050	A. S. Pinney	Hardware and tools	8 98
	8051	Union Iron Works.....	Castings and Boiler repairs.....	9 70
	8052	Lyman Felheim.....	Lumber.....	22 68
	8053	Lake City Machine Shop....	Tools and repairs.....	26 70
	8054	South Erie Iron Works.....	Castings	46 98
	8055	N. Y. & P. Telephone & Tel. Co....	Rental of telephones.....	56 25
	8056	Standard Brick Works.....	Brick	65 45
	8057	Hays Manufacturing Co	Fittings for Connections, etc.....	79 75
	8058	Erie Machine Shop.....	Repairs to Boilers and Engines.....	82 21
	8059	Atlantic Refining Co.....	Oil.....	119 20
	8060	Robt. J. Saltsman.....	Coal.....	199 67
	8061	R. D. Wood & Co.....	Fire Hydrants and Stop Valves.	1,638 15
	8062	Geo. C. Gensheimer, Asst. Secy.....	Sundries.....	18 59
	8063	Pay Roll—Street Work.....	Disbursed by M. L. Whitley, Clk....	572 39
	8064	The Mohawk Refining Co.....	Boiler compound.....	8 33
24	8065	E. McK. Whitley.....	Coke	1 50
	8066	O. C. Thayer & Son.....	Potter's clay.....	2 00
	8067	Henry Beckman & Son.....	Water pails.....	3 90
	8068	Beaver Coal & Coke Co.....	Coal.....	4 38
	8069	Atlantic Refining Co.....	Oil.....	4 40
	8070	Lyman Felheim.....	Meter boxes.....	6 05
	8071	Union Ice Co.....	Ice.....	6 20
	8072	C. Kessler.....	Soap, lye, etc.....	11 10
	8073	Saltsman & Austin.....	Cement.....	13 15
	8074	South Erie Iron Works.....	Castings	25 74
	8075	Erie Mfg. & Supply Co.....	Hose, Tools, Waste, etc.....	37 76
	8076	Erie Machine Shop.....	Repairs to Boilers and Engines.....	40 94
	8077	The Orient Electric Co.....	Incandescent Lamps.....	41 80
	8078	Hays Manufacturing Co.....	Fittings for Connections, etc.....	57 14
	8079	E. J. Riblet.....	Shop rent—3 months.....	60 00
	8080	Erastus G. Smith, Ph. D.....	Chemical analyses of water.....	75 00
	8081	Erie Oil Works.....	Oil.....	89 05
	8082	Globe Iron Foundry Co	Castings	94 98
	8083	Robt. J. Saltsman.....	Coal, coke and wood.....	178 22
	8084	Baas & Althof.....	Stairs, rail, etc., Engine House No. 3.	251 13
	8085	*Will appear in November, 1896,	Statement.	
	8086	Pay Roll—Street Work.....	Disbursed by M. L. Whitley, Clk....	633 21
31	8087	Times, Graphic & Observer Co....	Advertising.....	2 40
	8088	Herald Ptg. & Pub. Co.....	Advertising.....	5 00
	8089	Held, Gorenflo & Co.....	Advertising.....	5 00
	8090	The Erie Dispatch.....	Advertising.....	6 00
	8091	Frank P. Thayer.....	Top dressing	64 80
	8092	T. W. Shacklett.....	Services as Commissioner.....	150 00
	8093	William Hardwick.....	Services as Commissioner.....	150 00
	8094	Clark Olds.....	Services as Commissioner.....	150 00
	8095	The Bourne Fuller Co.....	Galvanized wrought iron pipe.....	608 71
	8096	Pay Roll—Pumping Station.....	Disbursed by Geo. C. Gensheimer, Assistant Secretary.....	580 00
	8097	Pay Roll—Office, Inspectors, etc...	Disbursed by Geo. C. Gensheimer, Assistant Secretary.....	968 76
	8098	Pay Roll—Street Work.....	Disbursed by M. L. Whitley, Clk....	745 79
	8099	D. P. Murphy.....	Mason work	23 00
Total				\$11,442 67

November.

TO PAY VOUCHER,

<i>Date.</i>	<i>No.</i>	<i>Of</i>	<i>For</i>	<i>Amount.</i>
2	8101	Lake Shore & M. S. Ky Co.....	Freight.....	\$ 46 12
4	8100	Thacher & Breymann.....	Intake No. 2, etc.....	5,570 61
	8185	Thomas Paskett.....	Stone (See October).....	375 00
7	8102	Geo. C. Gensheimer, Asst. Secy....	Sundries.....	46 86
	8103	J. A. Paisley.....	Coal.....	334 08
	8104	Pay Roll—Street Work	Disbursed by M. L. Whitley, Clk....	581 89
14	8105	W. F. Nick & Son.....	Glass and putty.....	1 00
	8106	W. H. Dickson.....	Powder, caps and fuse.....	2 28
	8107	Ashby & Vincent.....	Stationery	2 80
	8108	Robt. J. Saltsman.....	Coke.....	3 81
	8109	Keystone Electric Co	Carbon brushes.....	4 00
	8110	Mehl & Sapper.....	Clamps.....	4 35
	8111	Schaffer & Budenberg.....	Thermometer.....	5 00
	8112	A. Brugger.....	Wooden plugs.....	5 20
	8113	Standard Brick Works.....	Brick	5 50
	8114	John O. Baker.....	Labor and lumber.....	6 09
	8115	Henry A. Niemeyer.....	Material at Reservoir	7 00
	8116	Jarecki Manufacturing Co., Lt'd.	Pipe and Valves.....	7 52
	8117	Saltsman & Austin.....	Cement	7 60
	8118	J. N. Blaisdell.....	Horse shoeing.....	8 00
	8119	C. Kessler.....	Brooms, mops, etc.....	8 20
	8120	Erie City Brick Yard.....	Brick	8 25
	8121	South Erie Iron Works.....	Castings.....	9 28
	8122	Thomson Meter Co.....	Repairing meters.....	9 60
	8123	J. Kretz, Agent.....	Old rope	13 50
	8124	Wm. Densmore & Co.....	Oats.....	14 60
	8125	O. C. Thayer & Son.....	Clay and brick.....	14 60
	8126	E. J. Riblet.....	Shop rent.....	20 00
	8127	Erie Machine Shop.....	Boiler and Engine repairs.....	24 21
	8128	Union Ice Co.....	Ice.....	24 60
	8129	Herald Ptg. & Pub. Co.....	Stationery and printing.....	24 60
	8130	Robt. T. Walker.....	Rent for barn.....	30 00
	8131	R. T. Williams & Co.....	Plumbing material and labor.....	30 86
	8132	Dispatch Ptg. & Engraving Co.....	Stationery and printing.....	60 50
	8133	Union Iron Works.....	Boiler repairs.....	74 24
	8134	Jas. L. Firman.....	Teaming.....	74 28
	8135	Henry R. Worthington.....	Repairs, Engine No. 4.	100 00
	8136	Erie Mfg. & Supply Co... ..	Oil, Tools, Packing, etc.....	111 65
	8137	Atlantic Refining Co	Oil	118 55
	8138	Hays Manufacturing Co.....	Pipe and fittings for Connections....	130 10
	8139	Henry Mayer.....	Repairing cuts in asphalt paving.....	132 89
	8140	Union Water Meter Co.....	Meters and fish trap.....	193 75
	8141	Pay Roll—Street Work.....	Disbursed by M. L. Whitley, Clk ...	708 05
21	8142	Geo. C. Gensheimer, Asst. Secy....	Sundries.....	16 66
	8143	Frank P. Thayer.....	Top dressing.....	71 26
	8144	W. E. Ball, Collector.....	Taxes.....	218 75
	8145	Pay Roll—Street Work	Disbursed by M. L. Whitley, Clk....	826 26
28	8146	McMahon & Sullivan.....	Old rope	16 07
	8147	W. H. Maloney & Co.....	Trees....	144 50
	8148	Pay Roll—Street Work	Disbursed by M. L. Whitley, Clk....	585 00
30	8149	Pay Roll—Pumping Station.....	Disbursed by Geo. C. Gensheimer, Assistant Secretary.....	580 00
	8150	Pay Roll—Office, Inspectors, etc...	Disbursed by Geo. C. Gensheimer, Assistant Secretary.....	906 66
Total				\$12,325 54

December.

TO PAY VOUCHER.

Date.	No.	Of	For	Amount.
5	8151		Tools and repairs.	1 00
	8152		Repairing pavement.	2 29
	8153		Painting and lettering Bouy.	4 00
	8154		Brick	5 50
	8155		Coal	5 75
	8156		Oil.	5 83
	8157		Horse shoeing.	6 40
	8158		Motor repairs.	6 75
	8159		Fire brick and fire clay.	6 75
	8160		Old iron.	7 12
	8161		Soap, etc.	7 70
	8162		Blank books.	8 00
	8163		Cement.	8 10
	8164		Coke and wood.	9 75
	8165		Brick.	11 00
	8166		Repairing steam pipes.	13 25
	8167		Oats.	15 00
	8168		Repairs at Pumping Station.	16 25
	8169		Rent of shop (November, 1896).	20 00
	8170		Teaming.	24 00
	8171		Badges.	27 00
	8172		Printing and stationery.	42 15
	8173		Hardware, etc.	51 72
	8174		Tel. Co.	56 25
	8175		Rental of telephones.	56 67
	8176		Repairs of Boilers and Engines.	57 55
	8177		Oil.	137 72
	8178		Tools, Waste, Packing, etc.	168 48
	8179		Coal.	316 24
	8180		Pipe and fittings.	645 25
	8181		Dredging and filling.	824 84
12	8182		Disbursed by M. L. Whitley, Clk.	15 00
	8183		Electrical work in office.	23 59
	8184		Freight.	55 46
15	8185		Disbursed by M. L. Whitley, Clk.	1 50
21	8186		Old rope.	2 19
	8187		Tools.	3 06
	8188		Old iron.	6 40
	8189		Hardware.	7 00
	8190		Horse shoeing.	7 14
	8191		Repairing tools.	7 20
	8192		Engine repairs.	9 50
	8193		Motor repairs.	9 68
	8194		Boiler repairs.	10 65
	8195		Leather.	11 20
	8196		Cement, fire brick, etc.	13 50
	8197		Co., Lt'd.	14 00
	8198		Lanterns and pails.	16 04
	8199		Ice.	17 33
	8200		Oats.	17 62
	8201		Coke and wood.	20 00
	8202		Repairing pavement.	20 25
	8203		Lumber, etc.	24 69
	8204		Rent of shop (December, 1896).	39 48
	8205		Printing and stationery.	50 84
	8206		Cement and pipe.	72 19
	8207		Boiler Compound.	81 27
	8208		Boiler and Engine repairs.	96 95
	8209		Brick.	102 75
	8210		Castings.	105 93
	8211		Castings.	120 00
	8212		Oil.	150 00
	8213		Books and stationery.	150 01
	8214		Pipe and fittings.	150 00
	8215		Taxes.	
	8216		Services as Commissioner.	
	8217		Services as Commissioner.	
	8218		Services as Commissioner.	

December—Continued.

TO PAY VOUCHER.

<i>Date.</i>	<i>No.</i>	<i>Of</i>	<i>For</i>	<i>Amount.</i>
21	8217	R. D. Wood & Co.....	Stop Valves.....	\$ 214 70
	8218	Pay Roll—Street Work.....	Disbursed by M. L. Whitley, Clk.....	257 20
	8219	Pay Roll—Pumping Station.....	Disbursed by Geo. C. Gensheimer, Assistant Secretary.....	580 00
	8220	Pay Roll—Office & Inspectors.....	Disbursed by Geo. C. Gensheimer, Assistant Secretary.....	906 74
	8221	D. P. Murphy.....	Mason work.....	80 00
26	8222	James Firman.....	Hay.....	14 85
	8223	Geo. C. Gensheimer, Asst. Sec.....	Sundries.....	63 23
	8224	Chas. S. Clarke, Postmaster.....	Postage stamps.....	100 00
	8225	Pay Roll—Street Work.....	Disbursed by M. L. Whitley, Clk.....	192 38
29	8226	S. A. Davenport.....	Legal services.....	100 00
Total				\$ 6,935 80

Recapitulation, 1896.

<i>No. Voucher.</i>	<i>Month.</i>	<i>Amounts.</i>
19	January.....	\$ 21,202 82
71	February.....	7,260 04
9	March.....	715 97
48	April.....	11,092 37
58	May.....	9,476 35
39	June.....	13,497 51
17	July.....	16,391 87
56	August.....	13,657 70
8	September.....	2,232 83
79	October.....	11,442 67
52	November.....	12,325 54
76	December.....	6,935 80
532	Total	\$126,231 47

DISBURSEMENTS.

	For the Year 1896.			From be- ginning of Works to December 31, 1896.
	Labor.	Material.	Total.	
a	74	\$ 27 91	\$ 28 65	\$ 293 26
b				66,890 78
c				3,364 13
d				8,554 80
e	83,944 14	2,937 55	6,181 89	112,612 05
f	24 95	104 44	129 39	1,291 87
g				93,336 61
h				15 05
i				48,353 18
j				21,401 94
k				1,398 88
l	19 06	15 15	34 16	340 95
m				722 98
n	270 78	1,464 83	1,735 41	26,307 24
o	76	28 66	29 42	177 24
p				8,148 59
q	86 84	213 83	300 67	4,412 64
r				49,474 39
s	29,652 13	25,836 19	55,488 62	134,594 54
t	1 04	39 10	40 14	99,420 95
u	247 23	2 28	249 51	173 18
v	6,375 04	2,384 55	9,259 69	839 71
w				516,880 77
x				75,955 61
y	142 97	983 86	1,136 83	17,408 39
z	1 00	37 79	38 79	88
aa				1,068 65
ab	11	4 23	4 34	9 60
ac				4 07
ad				3,244 68
ae				2,918 92
af				123,150 83
ag	671 74	2,192 61	2,764 35	38,247 45
ah				217 05
ai				52 82
aj	3 22	121 68	124 90	664 48
ak	158 88	159 36	318 25	4,704 61
al	04	1 66	1 70	12 79
am	8,165 63	2,687 34	11,052 97	15,634 05
an	17	6 38	6 65	242 82
ao	458 86	70 70	529 06	7,201 48
ap				18,865 28
aq	111 03	182 82	293 85	840 94
ar	72 26	85 95	158 21	712 86
as	166 47	256 06	412 53	1,069 80
at	58 20	125 49	183 69	888 68
au	93 40	183 34	276 74	580 27
av	90 07	108 14	198 21	458 03
aw	18 15	87	19 02	524 37
ax	2,065 58	372 62	2,438 20	9,754 22
ay	42 13	2 08	44 21	77 00
az				13,402 04
ba	3 23		3 23	115 53
bb				310 09
bc	17 50	38 62	56 12	489 68
bd	84 21	717 87	802 08	1,419 90
be	86		95	1,003 96
bf	41 84	27 72	69 56	1,388 64
bg	76 49	278 12	354 61	718 25
bh				1 05
bi	07	2 47	2 54	174 27
bj	18 03	11 71	29 74	314 60
bk	1 74	65 65	67 39	271 80
bl	348 22	26 24	374 46	2,056 77
bm	76	29 79	29 79	134 33

DISBURSEMENTS—Continued.

Department.	Account.	For the Year 1896.			From beginning of Works to December 31, 1896.
		Labor.	Material.	Total.	
Maintenance.	Horse, Wagon and Cartage.. ..	\$ 86 87	\$ 215 07	\$ 301 94	\$ 4,423 72
	Intake Pipe No. 1.....	a .....	.....	.....	146 11
	Light, Oil, Lamps, Wicks, etc.....	a 79	29 99	30 78	102 32
	Mains and Branches	1,409 72	139 65	1,549 37	19,395 78
	Main, 30-inch.....	a .....	.....	.....	899 33
	Meters.....	111 38	175 33	286 71	4,928 83
	Office Furniture and Fixtures.....	a 2 30	20 02	22 32	284 43
	Oil and Tallow	b 24	8 95	9 19	13 73
	Paving and Street Repairs.....	a .....	.....	.....	449 94
	Railroad Switch and Scales.....	a 1 64	.....	1 64	616 34
	Reservoir.....	198 90	43 31	242 21	25,116 19
	Stand Pipe.....	c 4 61	.....	4 61	8,821 54
	Stop Valves.....	610 75	198 63	809 38	5,060 78
	Superintendent's Stores.....	.....	.....	.....	396 52
	Superintendent's Expense	a .....	.....	.....	52 55
	Shop Rent.....	a 3 22	121 68	124 90	664 24
	Tools and Repairs.....	159 34	176 33	335 67	5,145 51
	Waste and Packing.....	b 36	13 60	13 96	36 14
Operating.....	Ad., Books, Sta. and Printing.....	a 3 38	127 72	131 10	980 27
	Buildings and Grounds.....	b 1,293 34	.....	1,293 34	4,994 96
	Engineers and Firemen.....	6,676 24	.....	6,676 24	124,145 81
	Engineer's Stores.....	.....	.....	.....	2,348 57
	Expense	a 145 92	74 55	220 47	1,025 65
	Electric Light Plant.....	b 04	1 51	1 55	34 68
	Fire Hydrants.....	b 61 79	.....	61 79	192 37
	Fuel.....	95 41	3,606 21	3,701 62	158,003 82
	Horse, Wagon and Cartage.....	d 24	9 07	9 31	54 81
	Inspectors.....	c 2,576 35	.....	2,576 35	9,310 67
	Insurance.....	2 24	84 64	86 88	1,351 96
	Light, Oil, Lamps, Wicks, etc.....	a 2 25	84 82	87 07	341 74
	Meters.....	b 787 86	.....	787 86	2,813 78
	Oil and Tallow.....	27 71	1,047 42	1,075 13	12,660 62
	Reservoir.....	b 492 70	.....	492 70	2,305 07
	Rent of Office.....	b 2 40	35 77	38 17	602 93
	Stop Valves.....	e 196 46	.....	196 46	233 23
	Tools and Repairs.....	a 4 25	160 39	164 64	493 16
	Taxes—State, County and School...	9 03	341 34	350 37	1,829 70
Accounting...	Telephone and Telegraph.....	a 25 44	224 42	249 86	988 24
	Waste and Packing.....	19 80	748 57	768 37	5,726 17
	Water Rents returned.....	26	9 57	9 83	1,066 48
	Ad., Books, Sta. and Printing.....	10 45	395 10	405 55	9,296 23
	Expense.....	58	21 82	22 46	14,786 39
Sundries.....	Horse, Wagon and Cartage.....	b .....	.....	.....	17 30
	Postage.....	8 76	331 17	339 93	5,871 07
	Salaries.....	7,411 02	.....	7,411 02	175,974 75
Legal.....	City of Erie Sinking Fund Com.....	.....	.....	.....	105,500 00
	City of Erie, Penn'a.....	a .....	.....	.....	6 41
	Court Costs.....	.....	.....	.....	478 40
	Counsel Fees.....	.....	.....	.....	3,258 53
	Expense.....	a 100 00	.....	100 00	189 02
Totals.....		\$75,840 35	\$50,391 12	\$126,231 47	\$2,278,575 81

a Accounts started in 1891.

b Accounts started in 1892.

c Accounts started in 1893.

d Accounts started in 1894.

e Accounts started in 1895.

f Accounts started in 1896.

RECAPITULATION.

Department.	For the Year 1896.				From be- ginning of Works to December 31, 1896.
	Pro Rata.	Labor.	Material.	Total.	
Construction.....	.70441523+	\$ 49,566 55	\$ 39,352 82	\$ 88,919 37	\$1,497,708 05
Maintenance .....	.07964804+	6,319 88	3,734 21	10,054 09	133,984 97
Operating .....	.15035165+	12,423 11	6,556 00	18,979 11	331,504 69
Accounting.....	.06479287+	7,430 81	748 09	8,178 90	205,945 74
Sundries.....					105,506 41
Legal.....	.00079219+	100 00		100 00	3,925 95
Totals.....	.99999998+	\$75,840 36	\$50,391 12	\$126,231 47	\$2,278,575 81

**Statement of Account with City of Erie, Penna.
1896.**

CITY OF ERIE, PENNA.		Dr.
WATER—		
Fire Hydrants.....	\$28,270 00	
Park Fountains.....	1,251 05	
Flushing Mill Creek..	\$125 00	
Flushing Sewers.....	450 00—	575 00
City Hall.....		307 86
Drinking Fountains..	98 12	
Drinking Fountain at NW. cor. State St. and S. Park Row from May 23, 1883..	204 22—	302 34
Engine Houses.....		182 63
Lake Side Park, West		72 00
Central Park, West...		50 00
Central Park, East....		50 00
Lake Side Park, East		17 90—
		\$ 31,078 78
INTEREST—		
From Second National Bank Balances, October 1, 1895, to April 1, 1896.....	153 56	
April 1, 1896, to October 1, 1896.....	96 25—	249 81
Balance.....		\$673,305 55—
		<u>\$704,634 14</u>
CREDITS.		
BALANCE—		
December 31, 1895.....	\$676,090 52	
INTEREST—		
On same to December 31, 1896.....	27,043 62	
RENT—		
Of Offices one year (including old Common Council Room).....	1,500 00—	\$704,634 14
Balance due the City of Erie, Penna, December 31, 1896...		<u>\$673,305 55</u>

1896.

Statement of Resources and Liabilities December 31,

1896.

RESOURCES.

PLANT NORTH OF FRONT STREET—Buildings and Grounds,
including Piers to Intake No. 1.....

Engine House No. 3, from January 1, 1892.....

Boilers from January 1, 1891.....

New Boiler Equipment from January 1, 1896.....

Engines and Boilers to January 1, 1891.....

Engine No. 4 from January 1, 1892.....

Electric Light Plant.....

Engine Room Furniture and Fixtures.....

Intake Pipes—No. 1.....

No. 2 from January 1, 1892.....

Railroad Switch and Scales.....

Water Lots from January 1, 1895.....

PLANT SOUTH OF FRONT STREET—Connections.....

Drinking Fountains from January 1, 1894.....

Fire Hydrants.....

Mains and Branches.....

Main, 30-inch.....

Meters.....

Stop Valves.....

Office Furniture and Fixtures.....

Reservoir.....

PERSONAL—Cash in hands of Treasurer, City of Erie.....

Accounts Assessed.....

Meter.....

Plumbing.....

LIABILITIES.

Accounts—City of Erie, Pa.....

Advanced on assessed.....

Balance.....

\$106,030 50

21,591 35 \$127,621 85

3,409 15

39 18

104,325 20

49,058 00

156,831 53

732 69

1,549 20

55,568 44

137,920 72

193,489 16

3,262 09

15,794 07 \$499,280 59

121,502 81

1,307 83

28,045 57

\$564,220 66

83,327 29

647,547 95

18,367 16

35,987 02

852,758 34

1,084 88

137,629 35

991,472 57

1,490,753 16

635 29

367 27

6,183 32

6,550 59

398 06

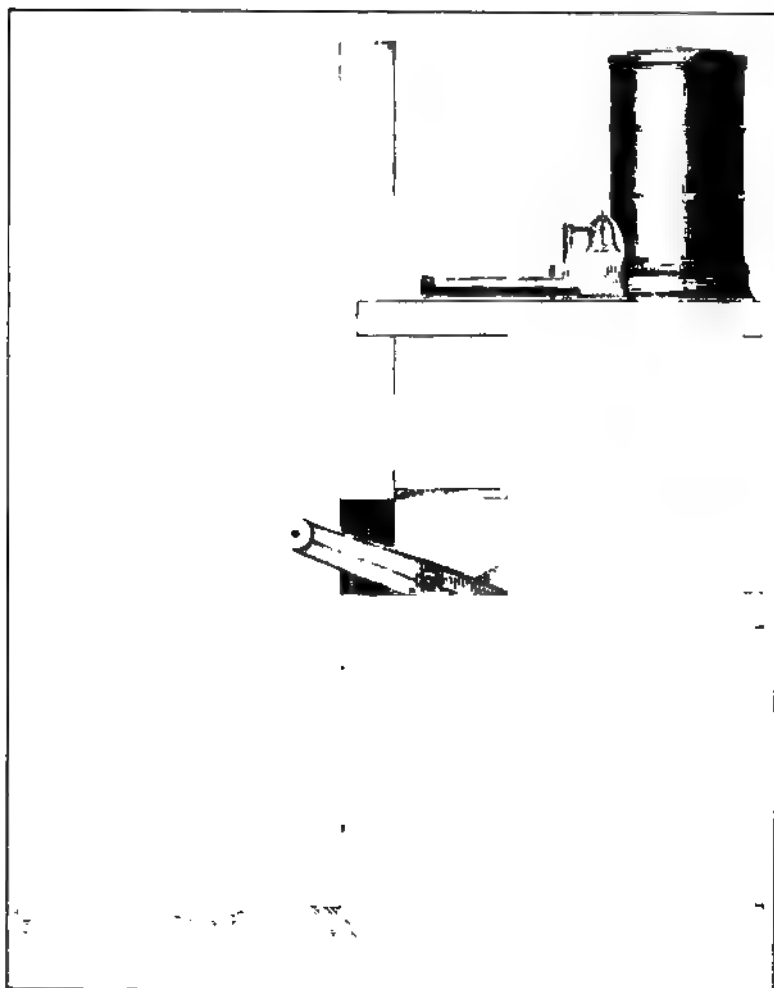
6,948 65 7,583 94 \$1,498,337 10

673,305 55

191 34

673,496 89

824,840 21 \$1,498,337 10



CORNISH BULL PUMP.

BALANCE SHEET.—INDIVIDUAL LEDGERS.

1896.

1896.

WATER ACCOUNTS.

Ward.	Balance from Dec. 31, 1895.	Assessments.	Additions.	Penalties.	Balance to Jan. 1, 1897.	Total.	Balance from Dec. 31, 1896.	Deductions.	Cash.	Balance to Jan. 1, 1897.
First.....	\$ 4 00	\$12,849 18	9823 77	988 26	923 47	\$13,640 17	955 46	8611 00	\$12,849 43	\$40 19
Second.....	85 51	20,862 04	1,031 81	92 63	20 80	22,041 73	42 82	823 43	21,124 23	101 25
Third.....	103 25	23,214 58	921 81	93 80	44 21	24,461 74	46 32	863 58	23,491 20	60 64
Fourth.....	88 80	18,802 19	943 57	91 68	43 40	19,989 73	34 13	1,220 83	18,672 06	42 01
Fifth.....	70 32	8,404 19	467 61	57 51	12 50	9,103 02	19 68	303 12	8,658 25	58 27
Sixth.....	51 42	10,367 60	530 92	54 24	11 70	11,035 97	12 53	416 89	10,589 28	37 27
Seventh.....	31 75	828 72	48 05	3 62	28 17	938 31	33	97 68	832 63	7 64
Total.....	485 74	95,494 23	4,587 54	481 82	191 34	101,240 67	221 27	4,389 70	96,252 43	367 27

METER ACCOUNTS.

First.....	848 70	3,510 46	.....	10 19	.....	4,369 35	.....	4 18	3,385 05	980 12
Second.....	2,967 20	11,710 71	.....	62 36	.....	14,730 27	.....	12 38	11,574 38	3,143 51
Third.....	917 60	8,703 32	.....	21 56	.....	4,642 48	.....	23 89	3,745 54	873 05
Fourth.....	247 30	1,225 03	.....	8 16	.....	1,480 49	.....	1 17	1,163 71	315 61
Fifth.....	607 99	3,000 63	.....	2 82	.....	3,611 44	.....	92	2,980 52	630 00
Sixth.....	210 96	773 14	.....	19	.....	984 29	.....	.....	786 07	199 22
Seventh.....	244 75	312 76	.....	19 69	.....	577 20	.....	37 09	498 30	41 81
Total.....	6,034 50	24,236 05	.....	124 97	.....	30,395 52	.....	79 63	24,132 57	6,183 32

SPECIAL PERMITS.

First.....	.....	31 62	.....	.....	.....	31 62	.....	.....	31 62	.....
Second.....	.....	52 68	.....	.....	.....	52 68	.....	.....	52 68	.....
Third.....	.....	101 60	.....	.....	.....	101 60	.....	.....	101 60	.....
Fourth.....	.....	53 21	.....	.....	.....	53 21	.....	.....	53 21	.....
Fifth.....	.....	23 50	.....	.....	.....	23 50	.....	.....	23 50	.....
Sixth.....	.....	11 45	.....	.....	.....	11 45	.....	.....	11 45	.....
Seventh.....	.....	11 25	.....	.....	.....	11 25	.....	.....	11 25	.....
Total.....	.....	285 31	.....	.....	.....	285 31	.....	.....	285 31	.....

BUILDING PERMITS.

First.....	.....	65 44	.....	.....	.....	65 44	.....	.....	65 44	.....
Second.....	.....	176 54	.....	.....	.....	176 54	.....	.....	176 54	.....
Third.....	.....	205 14	.....	.....	.....	205 14	.....	.....	205 14	.....
Fourth.....	.....	129 16	.....	.....	.....	129 16	.....	.....	129 16	.....
Fifth.....	.....	76 97	.....	.....	.....	76 97	.....	.....	76 97	.....
Sixth.....	.....	88 93	.....	.....	.....	88 93	.....	.....	88 93	.....
Seventh.....	.....	30 45	.....	.....	.....	30 45	.....	.....	30 45	.....
Total.....	.....	752 63	.....	.....	.....	772 63	.....	.....	772 63	.....
Water.....	6,520 24	120,788 22	4,587 54	606 79	191 34	132,694 13	221 27	4,479 33	121,442 94	6,550 59

PLUMBING ACCOUNTS.

First.....	9 08	67 98	.....	.....	.....	67 06	.....	73	16 66	49 67
Second.....	25 56	62 51	.....	.....	.....	88 07	.....	9 42	72 47	6 18
Third.....	130 14	392 35	.....	.....	.....	522 49	.....	101 08	160 25	261 16
Fourth.....	71 81	182 95	.....	.....	.....	254 76	.....	58 91	128 74	67 11
Fifth.....	.....	8 69	.....	.....	.....	8 69	.....	.....	8 69	8 69
Sixth.....	.....	32 32	.....	.....	.....	32 32	.....	.....	23 63	5 25
Seventh.....	.....	97 18	.....	.....	.....	97 18	.....	.....	91 93	398 06
Total.....	236 59	833 98	.....	.....	.....	1,070 57	.....	170 14	502 37	6,948 65
Grand Total.....	6,756 83	121,622 20	4,587 54	606 79	191 34	133,764 70	221 27	4,649 47	121,945 31	6,948 65

Meter Accounts are rendered at the close of each quarter, which will explain the large balance to January 1, 1897.

GASKILL HORIZONTAL COMPOUND PUMP.

Statement of Work Done by Inspector No. 1 in 1896.

Month.	Unpaid.	Vacancies.	Leak and Waste	Paid.	(Occupied,	New Houses.	Complaints.	Leak and Waste	New Work.	Total.
January	18	40	2	11	39	18	Frozen. 23	1	48	186
February	18	18	2	11	30	21	Frozen. 48	1	103	246
March	18	7	1	11	36	36	Frozen. 6	1	165	254
April	9	23	1	8	77	60	Frozen. 6	1	179	334
May	9	29	1	8	36	46	Frozen. 6	1	283	412
June	14	14	1	8	19	22	Frozen. 6	1	165	228
July	23	23	1	8	15	26	Frozen. 6	1	170	228
August	26	26	1	8	44	27	Frozen. 6	1	113	246
September	20	20	1	8	22	22	Frozen. 6	1	101	181
October	73	73	1	8	41	26	Frozen. 6	1	90	230
November	67	67	1	8	21	26	Frozen. 6	1	89	246
December	27	27	1	8	21	14	Frozen. 6	1	118	190
Total	50	356	3	45	400	365	79	2	1,560	2,680

Statement of Work Done by Inspector No. 2 in 1896.

Ward.	Num-ber of Pre-mises In-spect-ed	No. of Hy-drants.			No. of Sprink-lers.			No. of Water Clos-ets.			No. of Urinals.	No. of Land Basins.	No. of Air Pumps.	No. of Heat-ing Boil-ers.	No. of Mfg. En-gines.	Total.
		No. of Draw Cocks.	No. of Necke.	No. of Carb.	Mfr. drank.	Lawn.	Sill Cooks.	No. of Bath Tubs.	No. of Wast Tubs.	No. of Closing Hopper.							No. of Non-Closing Hopper.	Pen Tank.
First.	1,273	1,277	4	63	50	43	90	62	50	563	37	319	4	12	6	4,368
Second.	2,100	2,319	11	46	45	49	54	57	66	907	65	392	13	13	18	7,042
Fifth.	2,979	1,074	3	17	38	50	12	13	20	213	9	68	4	5	5	2,941
Seventh.	28	25	.....	1	2	3	.....	.....	.....	2	.....	1	.....	1	1	72
Total	4,340	4,725	649	21	127	135	145	156	182	145	1,575	111	780	21	30	14,623

Statement of Work Done by Inspector No. 3 in 1896.

	118	62	413	543	548	242	121	61	1,379	100	843	21	24	11	8,493	
Third	207	10	118	62	413	543	548	242	121	61	1,379	100	843	21	24	11
Fourth	288	19	162	85	42	442	512	256	162	13	963	56	681	7	30	7
Fifth	298	19	162	85	42	442	512	256	162	13	963	56	681	7	30	7
Sixth	158	16	31	53	71	352	157	22	22	25	239	19	162	3	6	3
Seventh	6	4	4	...	25	4	3	...	...	...	2	...	4	...	...	123
Total	637	45	316	200	281	1,301	1,270	556	285	119	2,639	175	1,690	32	60	21

Statement of Meters December 31, 1896.

	Total						Total						Total	
	%	1	1½	2	3	4	6	%	1	1½	2	3		4	6
Union	43	7	13	12	6	8	89	47	9	13	14	6	9	98
Worthington	3	9	5	1	1	1	19	3	10	5	1	1	1	20
Thomson	3	6	4	3	4	1	25	2	3	6	4	4	1	27
Crown	3	3	1	6	1	2	16	4	1	4	3	1	8	20
Empire	2	2	3	3	3	3	5	1	2	2	3	3	3	5
National	1	1	1	1	1	1	1	3	3	3	3	3	3	3
Gem	1	1	1	1	1	1	1	3	3	3	3	3	3	3
Total	3	55	25	23	26	9	14	155	1	5	3	1	8	174

One 1-inch Worthington scraped, not worth repairing.

KIND.	Good.							Poor.							TOTAL.							
	SIZE.							SIZE.							SIZE.							
	%	1	1½	2	3	4	Total	%	1	1½	2	3	4	Total	%	1	1½	2	3	4	6	Total
Union.....	47	9	13	14	6	9	98	47	9	13	14	6	9	98	47	9	13	14	6	9	98	
Worthington.....	3	10	5	1	1	1	20	3	10	5	1	1	1	20	3	10	5	1	1	1	20	
Thomson.....	3	6	4	4	5	1	27	3	6	4	4	5	1	27	3	6	4	4	5	1	27	
Crown.....	1	4	3	1	8	1	20	1	4	3	1	8	1	20	1	4	3	1	8	1	20	
Empire.....	2	2	3	3	3	3	5	2	2	3	3	3	3	5	2	2	3	3	3	3	5	
National.....	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	
Gem.....	1	1	1	1	1	1	3	1	1	1	1	1	1	3	1	1	1	1	1	1	3	
Total.....	4	60	28	24	34	9	174	4	60	28	24	34	9	174	4	60	28	24	34	9	174	

Pumping Engine Statistics for 1896.

The pumps are four in number. Nos. 1 and 2 are known as the Cornish Bull Pumps. The diameter of each plunger is $20\frac{3}{4}$ inches, and each has a stroke of 10 feet. The capacity of each pump is estimated to be 165 gallons to each stroke. Pump No. 3 is a Gaskill Horizontal Compound Pumping Engine, having two H. P. cylinders 21 in. diameter, two L. P. cylinders 42 in. diameter, and two pumps $19\frac{1}{2}$ in. diameter, and all 36 in. stroke, of a guaranteed capacity of 5,000,000 gallons daily at a piston speed of 120 feet per minute against a head of 237 feet. Pump No. 4 is a Worthington Horizontal Compound High Duty Engine, having two H. P. cylinders 33 in. diameter, two L. P. cylinders 66 in. diameter, and two pumps 29 in. diameter, and all $49\frac{3}{4}$ in. stroke of a guaranteed capacity of 12,000,000 gallons daily at a piston speed of 128 feet per minute against a head of 260 feet. The Stand Pipe is 259.65 feet high. The Reservoir is nearly two miles from the Pumping works, the bottom of which is 210 feet above the surface of the Bay, and the water has been maintained during the year at an average depth in the Reservoir of 26.04 feet, making the average contents 12,000,000 gallons.

	No. 1.	No. 2.	No. 3.	No. 4.	Totals.						
Month.	Days Run Gallons.	Days Run Gallons.	Days Run Gallons.	Days Run Gallons.	Days Run	Gallons.	Daily Average	Average Left in Feet.			
Jan.	Out of Commission.	2 1,707,750	3 15,590,292	28 15	86	33	16	5,481,127	237.73		
Feb.		3 7,086,360	10 53,755,984	20 11	60	33	17	6,134,648	237.27		
March		" " " "	" " " "	31 17	44	31	17	4,569,359	226.38		
April		" " " "	4 13,064,870	24 13	40	32	16	3,042,303	237.87		
May		" " " "	31 16	60	31	16	16	5,458,211	237.47		
June		" " " "	5 24,008,168	27 14	30	32	17	5,762,163	237.36		
July		" " " "	31 17	04	31	17	18	5,638,035	237.93		
August		" " " "	31 17	40	31	17	17	5,622,208	237.74		
Sept.		" " " "	30 16	44	30	16	14	5,666,764	238.37		
Oct.		" " " "	31 15	36	31	15	15	5,151,261	237.93		
Nov.		" " " "	29 15	40	29	15	36	5,173,477	236.48		
Dec.		" " " "	4 17,663,272	30 15	04	34	17	76	5,717,969	236.77	
Total.	5	8,774,706	26	124,662,484	347	1,872,920	644	378	2,005,757,728	5,480,212	237.69

The regular employees at the Pumping Works are one chief engineer, two assistant engineers, three firemen, one watchman and one janitor. The chief engineer stands a watch of five hours, from 7 to 12 every forenoon; the assistants divide the remainder of each day equally between them; each one of the firemen stands a watch of eight hours. Besides firing, the firemen unload the coal from the cars, except when two pumps are run, in which case they are assisted by the watchman or a laborer. The chief engineer gives daily ten hours' service; when not on watch, is employed in repairs, supervision, etc. In addition to standing their regular watch, the assistant engineers aid their superior officer in keeping the machinery in order. The watchman takes care of the grounds and does such other work as may be required of him. The janitor takes care of the buildings.

Main Pipe Laid In 1896.

STREET.	LOCATION.	SIZES.					REMARKS.
		1 in.	4 in.	6 in.	8 in.	12 in.	
2d, bet. Plum and Cascade...		Feet. In.	Feet. In.	Feet. In.	Feet. In.	Feet. In.	{ Hyd. Branch taken out 167 feet west of Plum 10.3.
2d, cor. Plum.....		177					Hydrant Branch.
N. Park Row, s.w. cor. State			9				{ 75 ft. 3/4-in. pipe aband'd which s'pl'd water trough
6th, bet. Parade & East Ave..		42	1				Hydrant Branches.
7th, bet. Poplar & Liberty ...				142			
7th, cor. Cascade.....		7	5				Hydrant Branch.
8th, bet. Wayne & Perry.....	222	6	*8	3	221	6	*Hyd't Branch.
8th, crossing State.....				95			{ 70 ft. 4-in. pipe was abandoned in same place.
th, bet. Cascade & Cranberry		14	8				Hydrant Branches.
9th, at intersection of State..					21		{ 21 ft. 4-in. pipe was taken out same place.
10th, cor. Plum.....			2				Hydrant Branch.
10th, bet. Wallace & East Ave		48	10				Hydr't Branches.
11th, crossing State				82			
11th, Parade to Ash.....				135	0		{ 1350 ft. 4-in. taken out and replaced by 6-inch.
11th, cor. Ash.....			*8	6			{ Hyd't Br. taken out cor. 11th & Ash. 9 ft. 4-in. pipe
11th, bet. Wallace & Ash.....			*9	4			*Hydrant Branches.
12th, State to Chestnut.....						261	{ 2611.8 ft. 6-in. pipe abandoned on 12th st.
12th, bet. Peach & Chestnut	35	10	43	7			Hydrant Branch.
15th, bet. Ash & Reed.....		*7	4	108			*Hyd't Branch.
16th, bet. Myrtle & Chestnut				24			
19th, eastward from Holland				23			
20th, westward from Liberty				143			
Brown Ave, w. from Cascade				235	6		
22d, bet. Wayne & Perry.....			*8	10	626		*Hyd't Branch.
22d, eastward from Cascade..				39	6		
22d, bet. Ash & Reed.....				146	8		
23d, westw. from Penn'a Ave				141	2		
23d, eastward from Plum.....				217			
23d, bet. Wallace & Ash.....				60			
24th, eastw. from Penn'a Ave				100			
25th, bet. Parade & German,				205			
25th, eastward from Holland				22			
26th, bet. Parade & Wallace.						436	
27th, eastward from Plum....				157	6		
Perry, crossing 6th.....				106	6		
Wayne, northw. from 10th..				168			
Wayne, crossing 6th.....				109			
Reed, northward from 6th...				36			
Ash, from 10th to 9th				408	3		
Ash, southward from 6th....				66			
Wallace, northw. from 14th..				105	10		
Wallace, northw. from 11th..				21			{ 21 feet 4-inch taken out same place.
Wallace, crossing 6th.....				110			{ 36 feet 4-inch taken out same place.
German, bet. 21st & 22d.....				254	4		
Holland, from 7th to 9th.....				740	9		{ 740.9 4-inch taken out bet. 7th & 9th.
Holland, cor. 25th.....		10					Hydrant Branch.
Holland, southw. from 25th..				233			{ 233 feet 4-inch taken out same place.
French, cor. 2d		10					Hydrant Branch.
State, bet. 5th & North Park				138			{ 142 ft. 6-inch abandoned same place.
State, N.P'k to south of 11th					2233		{ 384 feet 4-inch taken out same place.
State, from 10th to 11th.....				384	4		

Main Pipe Laid in 1896—Continued.

STREET.	LOCATION.	SIZES.					REMARKS.
		1 in.	4 in.	6 in.	8 in.	12 in.	
		Feet, In.	Feet, In.	Feet, In.	Feet, In.	Feet, In.	
State, bet. N. Park & 13th...		22	10	84	11		Hydrant Branches. { 324 feet 1-inch abandoned (same place.
Peach, northward from 2d...		184	4				
Myrtle, north from 27th.				231	10		
Myrtle, bet. 5th & 6th.....				204			
Chestnut, south of 26th.....				85			
Poplar, bet. 2d & 3d.....				163	6		
Liberty, south from 7th.....		*11		189	6		*Hydrant Branch
Liberty, n. from Brown Ave,				234			
Liberty, from 18th to 19th... ..				291	8		
Plum, bet. 23d & 24th.....		*9		168	6		*Hydrant Branch
Cascade, north from 9th.....				169	10		
Cascade, bet. 22d & 23d.....				144			
Cascade, inters. of Brown Av				10			
Raspberry, cor. 7th.....			8 2				Hydrant Branch.
Penn'a Ave., bet. 23d & 24th				330			
Queen, east from East Ave... ..		278	6				
Summit, north from 27th.....				108			
Total.....		222 6	912 11	9478 2	2254	3047 8	

Summary of Pipe Laid, abandoned and taken out during 1896.

PIPE LAID—		1-inch.....	222	6-12 feet,
	4 “	912	11-12	“
	6 “	9 478	2-12	“
	8 “	2,254		“
	12 “	3,047	8-12	“
Total, 15,915 3-12 ft.				
PIPE ABANDONED OR TAKEN UP—		¾-inch.....	75	feet.
	1 “	324		“
	4 “	2,875	4-12	“
	6 “	2,753	8-12	“
				6,028 “
Net total,				9,887 3-12 “
Or 1 mile				4,607 3-12 “
Previously reported.....				92 miles 2,787 3-12 “
Grand total.....				94 miles 2,114 6-12 “

Tees Placed and Removed in 1896.

SIZE.	NUMBER.
4 x 4-inch	4
6 x 4-inch	29
6 x 6-inch.....	10
8 x 6-inch.....	7
12 x 4-inch.....	4
12 x 6-inch.....	6
30 x 6-inch.....	1— 61
Removed.	
4 x 4-inch.....	4
6 x 4-inch.....	6— 10
Total increase.....	51

Crosses Placed and Removed in 1896.

SIZE.	NUMBER.
4 x 4-inch.....	1
6 x 4-inch.....	2
6 x 6-inch	14
8 x 6-inch.....	5
8 x 8-inch.....	1
8 x 12-inch.....	1
12 x 6-inch.....	3
12 x 12 inch.....	2 —29
Removed.	
4 x 4-inch.....	6
6 x 4-inch.....	6
6 x 6-inch.....	3
12 x 6-inch.....	1— 16
Total increase.....	13

Connections Made in 1896.

SIZE.	NUMBER.		FT. OF SERVICE PIPE REQUIRED.
$\frac{3}{4}$ -inch.....	570		
1 "	7		
$1\frac{1}{2}$ "	5		
2 "	3		
4 "	3	588	13,198 $\frac{5}{8}$ ft.
Removed or abandoned.			
$\frac{3}{4}$ -inch.....	9		
1 "	4		
$1\frac{1}{2}$ "	1	14	552 $\frac{5}{8}$ "
Total increase.....	574		12,645 $\frac{9}{16}$ "
Equaling.....		2 miles,	2,085 $\frac{9}{16}$ "
Previously reported to December 31, 1895.....	36	"	5,051 $\frac{3}{8}$ "
Total to December 31, 1896.....	39	"	1,857 "

N. B.—In addition 157 connections were renewed in streets to be paved, and others which had given out, and 75 which were disconnected from one main and connected with another, etc.

Second street.....	1	Brought forward.....	111	Brought forward..	130
Fourth "	2	Twelfth street.....	2	French street.....	2
Sixth "	16	Eighteenth "	1	State "	9
Tenth "	50	East Avenue.....	1	Myrtle "	15
Eleventh "	42	Holland street.	15	Cascade "	1
Total.....	111	Total.....	130	Total....	157

Fire Hydrants Placed in 1896.

STREET.	STYLE.	LOCATION.	REMARKS.
Second	Matthews	N.W.cor. Plum	[Matthews taken out 167 f. w. of Plum
Fourth... ..	"	S.E. cor Cherry	[In place of Pittsburg.
Sixth.....	"	N.W. cor. Wayne.	
"	"	N.W.cor.Perry	[Matthews taken out 116 f.E. of Wayne
"	"	N.W.cor.E.Ave.	[Matthews taken out on E. Ave. & 6th
Seventh	"	N.E.cor.Casc.	[Matthews taken out 200 f. W. of Poplar
Eighth	"	240 ⁶ / ₁₂ ft. east of Wayne.	
Tenth.....	"	N.W. cor. Plum.	
"	"	N W. cor. Reed.	[In place of Bay State.
"	"	N.E. cor. Parade.	[In place of West Jersey.
"	"	N.W. cor. Wallace.	[In place of Pittsburg.
"	"	N.W. cor. Ash.	[In place of Bay State.
"	"	N.W. cor. Wayne.	[In place of Bay State.
"	"	N.W. cor. Perry.	[In place of Bay State.
"	"	N.W. cor. East Ave.	[In place of Bay State.
Eleventh.....	"	N.W. cor. Wallace.	[In place of West Jersey
Twelfth.....	6-in.	N.W. cor. Peach.	
"	"	320 ⁶ / ₁₂ ft. E. of Sassafras.	
"	6-in.	N.W. cor. Sassafras.	
"	"	325 ⁶ / ₁₂ ft. East of Myrtle.	
"	6-in.	N.W. cor. Myrtle	[In place of old Matthews
"	"	324 ⁶ / ₁₂ ft East of Chestnut.	
"	6-in.	N.E. cor. Chestnut.	
Fifteenth.....	"	216 ³ / ₁₂ ft. West of Reed.	
Twenty-first....	"	N.W. cor. Parade.	[In place of old Pittsburg
Twenty-second	"	N.W. cor. Perry.	
Twenty-third...	Bay State.	315 ft. West of Ash.	
Holland.....	Matthews.	N.E. cor. 25th.	
French.....	"	S.E.cor.2d.	[Matthews taken out N.E cor.2d.
State	6-in.	S.W. cor. N. Park Row.	
"	"	N.W. cor. S. Park Row.	
"	"	S.W. cor. 7th.	
"	"	S.W. cor. 8th.	
"	"	S.W. cor. 9th.	
"	"	S.W. cor 10th.	
"	"	S.W. cor. 11th.	
"	"	S.W. cor. 12th.	[In place of 4-in. Matthews
"	"	N.E. cor. 11th.	
Liberty.....	"	S.E. cor. 7th.	
Plum.....	Bay State.	N.E. cor. 23d.	[In place of Bay State taken out 124 ft. S.
Raspberry	Matthews.	N E. cor. 7th.	[of 22d

Summary of New Fire Hydrants Placed and Old Ones
Removed During 1896.

PLACED—	
Matthews—6-inch.....	12
Matthews -- 4-inch.....	27
Bay State—4-inch.....	2
	41
REMOVED—	
Matthews.....	7
Pittsburg.....	3
Bay State.....	6
West Jersey.....	2
	18
Net increase.....	23
Number in use December 31, 1895.....	491
Total in use December 31, 1896.	514

Stop Valves Set in 1896.

Street.	Style.	Size	Where Located.	Remarks
Front.....	Eddy.	4	22' E. of W. line of French 4.6' S. of N. line Front.	
Fifth.....	"	4	West line of Myrtle.....	
"	"	4	East " State.....	
"	"	4	West " Chestnut.....	Old one removed.
"	"	4	East " Chestnut.....	Old one removed 18.6'' W. of E. line of Chest.
North Park.....	"	6	West " State.....	Old one removed 49' W. of E. line of State.
Sixth.....	"	6	" " Holland.....	Old Ludlow removed.
"	"	6	East " Wallace.....	
"	"	6	West " Ash.....	
"	"	6	" " Wallace.....	
"	"	6	" " Wayne.....	
"	"	6	East " Perry.....	
"	"	6	West " East Ave.....	
"	"	6	" " Perry.....	
"	"	6	East " Wayne.....	
South Park.....	"	6	West " State.....	
Seventh	"	4	" " Reed	
Eighth....	"	6	" " Cascade.....	
"	"	6	" " Raspberry...	
Ninth.....	"	4	East " Chestnut.....	Old Ludlow removed.
"	"	4	West " State.....	
Tenth.....	"	6	" " Reed	
"	"	6	" " Wayne.....	
"	"	6	East " Wayne.....	
"	"	6	7' E. of E " French	Old Ludlow removed,
"	"	6	East " Ash.....	
"	"	6	West " Ash	
"	"	6	" " State.....	
Eleventh.....	"	4	East " Chestnut.....	In place of old one.
"	"	6	West " Wallace.....	
"	"	6	" " Ash.....	
"	"	6	East " Parade.....	In place of 4'' removed.
Twelfth.....	"	12	West " State	
"	"	12	" " Peach.....	2-6' abandoned on 12th & intersect'n of Peach
"	"	12	East " Sassafras.....	In place of 6'' removed.
"	"	12	West " Sassafras.....	In place of 6'' removed.
"	"	12	East " Myrtle.....	In place of 6'' removed.
"	"	12	West " Myrtle.....	In place of 6'' removed.
"	"	12	East " Chestnut.....	In place of 6'' removed.
Thirteenth.....	"	4	West " Peach.....	In place Ludlow removed.
Eighteenth....	"	6	" " Plum.....	
Twentieth.....	"	6	" " Liberty	
Brown Ave.....	"	6	" " Cascade.....	
Twenty-second..	"	4	" " German	
"	"	6	East " Wayne.....	
"	"	6	" " Cascade.....	
Twenty-third....	"	6	West " Penn'a Ave.	
"	"	6	East " Plum.	
Twenty-seventh.	"	6	" " Plum.....	
Ash.....	"	6	East " Ash 22.6'' N. of 3rd.	

Stop Valves Set in 1896—Continued.

Street.	Style.	Size.	Where Located.	Remarks.
Wallace	Eddy.	6	North line of 14th.....	
"	"	6	" " 6th	In place of 4'' removed.
German	"	6	South " 21st.....	
Holland.....	"	4	" " 23rd.....	
"	"	6	" " 7th.....	In place of 4'' removed.
"	"	6	North " 9th.....	In place of 4'' removed.
"	"	6	" " 26th.....	
"	"	6	South " 25th.....	In place of 4'' removed.
French.....	"	4	North " 9th	In place Ludlow removed.
"	"	4	" " 2nd.....	4'' Eddy ab'd S. line Front
State.....	"	6	South " S. Park Row	In place 4'' Ludlow remd.
"	"	8	" " N. Park R...	
"	"	8	North " 7th	
"	"	8	South " 7th	
"	"	8	" " 8th	
"	"	8	North " 9th	
"	"	8	South " 9th	
"	"	8	North " 10th	
"	"	8	South " 10th	
"	"	8	North " 11th	
"	"	8	South " 11th	
"	"	6	North " 11th	
"	"	6	South " 10th	In place of old 6'' rem'vd.
Peach.....	"	4	North " 2nd.....	
"	"	12	North " 12th	
"	"	6	South " 12th	In place of 6'' aband'd
"	"	6	North " N. Park R...	42' N. of S. line of 12th
Sassafras.....	"	4	South " 12th	In place Ludlow removed
Myrtle.....	"	4	" " 4th.....	In place Ludlow removed
Walnut	"	4	" " 6th	In place Ludlow removed
Liberty	"	6	" " 7th	
"	"	6	North " 19th	
Cascade.....	"	6	" " Brown Ave.	
Penn'a Ave.....	"	6	South " 23rd	
Queen	"	4	East " East Ave....	

Summary of Stop Valves Set, Removed and Abandoned			
SET— During 1896.			
Eddy.....	4-inch	19	
"	6-inch	48	
"	8-inch	10	
"	12-inch	8	
Total.....			85
REMOVED—			
Eddy	4-inch	8	
"	6-inch	5	
Ludlow.....	4-inch	7	
"	6-inch	2	
ABANDONED—			
Eddy.....	4-inch	1	
"	6-inch	3	
Total.....			26
Total increase.....			59

Amount of Coal Consumed in Pumping, Gallons of Water Pumped, Average Height Pumped, Cost per Million Gallons, Etc., from First Year Works were Operated to Dec. 31, 1896.

YEAR.	Tons Coal Consumed.	Price Coal per ton from May 1st of each year.	Cost Coal from Jan. 1st to Dec. 31st.	Grades of Bituminous Coal.	Gallons of Water Pumped.	Increase or Decrease.	Number of places supplied.	No. of Fire Hydrants.	Average height of Water in Reservoir above surface of Bay.	Cost Coal per million gallons raised to Reservoir.	Gallons raised to Reservoir by one pound of Coal.
1868.....	591 1	\$5 05	\$ 309 61	Lump.	.....	.....	.....	.....	.....	.....	.....
1869.....	544 4	5 05	4,818 48	"	.....	.....	.....	.....	.....	.....	.....
1870.....	1,064 5	5 05	5,159 10	"	246,648,960	.....	1,218	97	232 0	.....	.....
1871.....	1,422 7	5 05	7,117 00	"	279,368,495	32,719 535 i	1,727	99	232 0	\$18 76	98 5
1872.....	1,308 5	5 05	6,528 50	"	395,076,000	115,707,505 i	2,140	103	232 0	16 52	150 9
1873.....	1,672 5	5 05	8,412 65	"	384,062,415	11,013,585 d	2,475	107	232 0	21 90	114 8
1874.....	1,759 0	4 85	7,709 54	"	444,817,395	60,754,980 i	2,663	107	232 0	17 31	126 4
1875.....	1,836 4	4 85	8,657 61	"	531,005,475	86,188,080 i	2,700	110	232 0	16 30	145 5
1876.....	1,105 1	4 00	8,925 22	"	670,726,650	139,721,175 i	2,763	112	232 0	13 30	159 3
1877.....	2,456 6	3 70	8,509 33	"	660,981,810	9,744,840 d	2,854	114	232 0	12 75	135 7
1878.....	2,463 3	3 35	7,945 37	"	682,392,315	21,410,505 i	2,915	115	232 0	11 64	136 4
1879.....	2,628 1	3 09	7,428 92	"	807,800,400	125,408,085 i	3,011	121	232 0	9 19	153 6
1880.....	3,076 1	1 99	6,978 41	Slack.	775,805,250	31,995,150 d	3,568	126	232 0	8 99	126 0
1881.....	3,430 3	1 90	6,517 58	"	975,540,934	219,835,684 i	4,110	161	232 0	6 68	142 2
1882.....	2,968 2	1 75	5,355 93	"	829,759,260	145,881,674 d	4,687	171	234 0	6 45	139 7
1883.....	2,398 2	1 55	3,908 59	"	815,939 685	13,819,575 d	5,077	197	234 7	4 66	170 0
1884.....	3,010 8	1 45	4,502 61	"	917,781,350	101,841,665 i	5,395	248	234 3	4 99	152 4
1885.....	3,243 8	1 30	4,575 79	"	1,036,496,665	118,715,315 i	5,658	270	232 9	4 40	159 7
1886.....	3,369 0	1 25	4,318 64	"	1,117,389,075	80,892,410 i	6,140	280	233 3	3 86	165 8
1887.....	2,820 4	1 15	3,589 31	"	1,218,213,688	100,824,613 i	6,368	318	234 1	2 95	216 0
1888.....	2,392 3	1 09	2,545 46	"	1,341,708,002	123,494,314 i	6,600	333	234 6	1 89	292 1
1889.....	2,446 0	1 08	2,661 12	"	1,475,358,220	133,650,218 i	7,086	346	235 2	1 80	301 5
1890.....	2,583 6	1 20	3,052 89	"	1,659,625,551	184,267,331 i	7,728	372	236 9	1 81	322 4
1891.....	3,120 7	1 29	3,941 53	"	1,807,038,580	147,413,029 i	8,255	393	237 3	2 18	291 42
1892.....	3,658 0	1 32 ¹ / ₂	4,807 11	"	2,047,993,505	240,954,925 i	8,998	415	237 4	2 35	279 43
1893.....	4,693 5	1 32 ¹ / ₂	6,218 95	"	2,333,638,610	285,645,105 i	9,687	444	236 5	2 66	248 6
1894.....	2,960 0	.....	4,423 59	"	1,816,596,518	517,042,092 d	10,680	479	236 6	2 43	306 8
1895.....	3,541 5	1 22	4,377 16	"	1,975,396,305	158,797,787 i	.....	489	237 2	2 21	278 62
1896.....	3,056 0	1 13	3,603 28	"	2,005,757,728	30,361,423 i	10,846	514	236 0 237 8	1 796	328 17

Statement of Connections made to December 31, 1896.

WARD.	IN USE.										TOTAL.									
	SIZE IN INCHES.										SIZE IN INCHES.									
	IN USE.										TOTAL.									
	3/4	1	1 1/4	1 1/2	2	2 1/2	3	4	6	TOTAL.	3/4	1	1 1/4	1 1/2	2	2 1/2	3	4	6	TOTAL.
First.....	104	1	.....	.....	10	11	.....	14	.....	1,229	1,229	19	.....	10	11	.....	14	.....	.....	1,388
Second.....	216	1	1	1	27	15	.....	40	6	1,959	1,959	14	.....	27	15	.....	41	6	.....	2,280
Third.....	404	1	.....	.....	21	21	1	24	4	1,759	1,759	31	.....	21	21	1	24	4	.....	2,266
Fourth.....	210	1	.....	.....	16	24	.....	13	.....	1,448	1,448	27	.....	16	24	.....	13	.....	.....	1,742
Fifth.....	57	.....	.....	.....	9	7	.....	4	.....	1,009	1,009	10	1	9	7	.....	4	.....	.....	1,097
Sixth.....	73	2	.....	4	9	6	1	3	.....	1,177	1,177	16	.....	9	6	.....	7	.....	.....	1,291
Seventh....	.....	.....	1	.....	6	3	1	3	1	41	41	4	1	6	3	.....	1	3	1	60
Total.....	1,064	6	1	5	48	87	1	101	11	8,622	8,622	121	5	48	87	1	2	106	11	10,124

WORTHINGTON HORIZONTAL, COMPOUND HIGH DUTY PUMP.

FILTRATION.

REPORT OF COMMISSIONER CLARK OLDS.

To T. W. Shacklett, President:

In pursuance of a request from you, I present a report of my observations upon the filtration of public water supplies, made during a recent visit to Great Britain:

There is probably no one question which so greatly interests the community as its water supply, and there is no other question of such vital importance which receives so little attention from the community in general.

It is said that 80 per cent. of the human body is water, yet very few people stop to consider whether or not the water they drink is fit for consumption.

Whether the water we drink is wholesome or unwholesome depends largely upon the source of supply and the amount of pollution.

It is not the quantity of organic matter in water that renders it unwholesome and likely to cause disease; but it is the character of the organic matter it contains that renders its use dangerous.

Water, in which the organic matter is so scantily represented as to almost defy chemical detection, may be of the most poisonous character; yet when water contains a large amount of organic matter it may contain other organisms introduced through the same channels and should be condemned as unfit for consumption because of its power of disseminating infectious diseases.

These organisms found in water are microscopic and are known as microbes or bacteria, the most dangerous of which are typhoid bacilli and cholera spirilla, believed to be the only two infectious diseases which can be communicated from person to person by the use of drinking water.

Typhoid fever is an exclusively human affection and is generally communicated by means of the bacilli in the bowel discharges of persons suffering from it, consequently the great danger to a community is the possibility of its water supply being polluted with sewage containing the germs of infectious diseases.

The English filter-bed system is the best known method of purifying water on a large scale. Its use has become almost universal throughout Europe and is most efficacious in removing bacteria and other impurities from water.

All of the water used in London is filtered by this process; daily analyses show that from 98 to 99½ per cent. of all bacteria is removed from the water, which at its source is polluted to such an extent as to be totally unfit for domestic use. After efficient filtration the water is delivered in most excellent chemical and bacterial condition, excelling as regards organic purity the majority of deep well waters.

The construction of a filter-bed is quite simple, varying in detail according to the ideas of the Engineer.

It is a shallow reservoir of about one acre in area, made tight with concrete or other material, having the bottom slightly inclined to a central pipe or effluent drain. The bottom is first covered with tile leading to this central pipe which is of larger diameter; the whole is then filled to a depth of about six feet with sand and gravel, commencing with a layer of very coarse gravel on the bottom and finishing with a top layer of fine sand about two feet in thickness.

The water is admitted on top of this bed filling it to a depth of three or four feet above the sand.

The rate of filtration is regulated by the valves in the effluent drain.

The best results are said to be obtained by filtering about one and a half million gallons per day, although in some plants the daily effluent amounts to twice that quantity.

The number of beds must be regulated by the consumption of water, allowing one to be out of use all the time for cleaning.

The filter-bed acts mechanically because the fine sand strains all the substances suspended in the water. After a day's use, there is found upon the surface of the sand a gelatinous layer of material, which acts as a coagulent and entangles the major part of the bacteria in the water and retains them at or near the surface of the sand, producing bacteriological purification.

In addition there is a chemical process constantly going on. The bacteria which escape entanglement, attach themselves to the grains of sand and come in contact with the air in the filter-bed

which produces nitrification, and all the organic matter in the water during its passage through the filter-bed is actually burned up, and with it the disease germs.

The food for bacteria is thereby removed and the water thereafter is unfavorable for their development.

When the new filter-bed is put in operation it is filled and the water allowed to stand twenty-four hours before the effluent drain is opened, the settling produces the thin gelatinous layer on top of the sand which marks the efficiency of the filter-bed.

The longer the filter is in use the more efficient it becomes, until the surface layer becomes so thick that the water will not pass through it freely and it is then said to be clogged and must be cleaned.

In all large plants the cleaning process is going on in some of the beds all the time.

When a bed becomes clogged the water is permitted to settle away below the surface of the sand, gangs of men go out on the bed and with shovels skim off about one-half inch of the surface sand and wheel it ashore where it is washed and placed in a pile ready for use again. The skimming process goes on from time to time as the conditions require, till the surface layer of sand is reduced to about one foot in thickness, then all the sand which has been removed and washed is replaced over the entire surface of the bed, giving the top layer of sand its normal thickness of about two feet. Generally the sand is replaced about once a year, the body of the bed (barring accidents) lasts many years without being disturbed.

In addition to the filter-bed there is another factor which enters largely into the purification of water. It is the storage or subsidence reservoir, the importance of which is now universally acknowledged.

In all water in motion, there is a certain amount of matter in suspension, the specific gravity of which is slightly greater than that of water. When placed in large subsidence reservoirs for several days, sedimentation takes place and the sediment carries with it to the bottom a very large proportion of the bacteria in the water. Thus by sedimentation alone, water which is slightly contaminated, may be very much improved, and by proper storage rendered fit for domestic use.

Large storage reservoirs should always be used in connection with public water supplies and are a great benefit to the process of filtration, the purer the water is when introduced upon the bed the longer it will efficiently perform the work of filtration without cleaning, and consequently the less expensive it is to maintain.

The length of time which disease germs survive in water is somewhat problematical, but the best authorities seem to think that typhoid fever bacilli lose much if not all their virulence in about fifteen days, although under certain conditions they have been known to survive a much longer period of time.

Having called to your attention the danger to the community of a polluted water supply and how by proper precautions, these dangers may be eliminated or reduced to a minimum, it may not be improper to make some suggestions in regard to the improvement of our supply. We take our water from the Harbor into which the entire sewage of the city is deposited, the only factors of safety to the community are the extreme length of the intake pipe and the great dilution of the sewage; gradually the entire Harbor is becoming saturated with sewage.

Mill Creek, through whose channel the largest portion of the sewage of the city passes, might be separated from the balance of the Harbor by a line of crib work diverting its course across the end of the sand beach into the open Lake.

This work could be accomplished at comparatively small expense, the benefit to the water would be inestimable. A small portion of the sewage might be carried by the currents back into the Harbor through the channel, but it would come back in a very much diluted state and would be again diluted by the waters of the Harbor, thereby decreasing the danger to a minimum.

A large sedimentation reservoir could be constructed at the pumping station, connected with the intake pipe, in which the water would rise to the surface of the lake and after sedimentation pass into the well of the pumping Engine, or a large reservoir could be constructed on the high land south of the present reservoir, in either of which sedimentation would take place.

A reservoir of this character should contain at least one hundred million gallons, which at the present average consumption, would contain about twelve and a half days supply of water.

The present reservoir contains about four days supply, only the surplus pumpage passes into it, all the water in the mains is in circulation and there is no opportunity for sedimentation from the time the water enters the intake until it is taken out by the consumer.

The water is now, of moderately good chemical and bacterial quality, after ten or twelve days storage it would be greatly improved.

The construction of a large sedimentation reservoir either at the pumping station or south of the city, would be in my opinion, a step in the right direction.

If the present intake pipe is ever extended into the lake or if a system of filtration is adopted, in either case the construction of a sedimentation or storage reservoir is a necessity, and under existing conditions it would do much to improve the quality of the present supply.

It is not the intention of the writer to discuss the merits of the different methods of filtration or to recommend one more than another ; great progress has been made in the method of mechanical filtration and many American cities have installed plants of this character. Statistics show, that in all cities where efficient filtration of the water supply has been adopted, the death rate has decreased sufficiently to demonstrate the necessity of the filtration of all public water supplies.

All of which is respectfully submitted.

December 31, 1896.

CLARK OLDS.

OFFICERS AND SALARIES PAID THEM IN 1896.

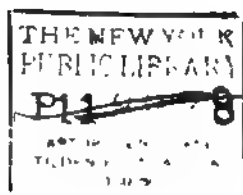
<i>Commissioners</i> —Wm. Hardwick.....	\$ 900 00
T. W. Shacklett.....	900 00
Clark Olds.....	900 00
<i>Secretary and Treasurer</i> —Wm. Himrod.....	2,000 00
<i>Assistant Secretary</i> —Geo. C. Gensheimer.....	1,440 00
<i>Book-Keepers</i> —John Kolb.....	1,080 00
R. H. Bear.....	960 00
W. W. Todd.....	840 00
<i>Clerk</i> —M. L. Whitley	660 00
<i>Inspectors</i> —John D. Spafford.....	815 00
Wm. McCleery.....	780 00
P. F. Weinheimer.....	780 00
<i>Meter Taker</i> —Perry E. Thurber.....	780 00
<i>Superintendent of Street Work</i> —R. T. Walker.....	1,320 00
<i>Foreman of Street Work</i> —Fred Simons, per day.....	2 75
Fred D. Gross, per day.....	2 75
<i>Chief Engineer</i> —F. A. Roth.....	1,320 00
<i>Assistant Engineers</i> —Geo. R. Miller.....	960 00
John Kelly.....	960 00
<i>Firemen</i> —Joseph Burns.....	660 00
Jacob Mullen.....	660 00
Henry F. Voltz.....	660 00
<i>Watchman at Pumping Station</i> —Michael Flynn.....	660 00
<i>Janitor at Pumping Station</i> —Nathan Block.....	600 00
<i>Keeper of Reservoir</i> —Samuel Phister.....	480 00
<i>Janitress</i> —Mrs. Matilda Sager.....	168 00

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THIRTY-FIRST
ANNUAL REPORT
OF THE
COMMISSIONERS
OF
WATER WORKS,
IN THE
CITY OF ERIE,
TO THE
COUNCILS,
FOR THE
YEAR ENDING DECEMBER 31, 1897.

ERIE, PA.:
HERALD PRINT. & PUB. CO.,
1898.



PUMPING STATION AS SEEN FROM THE BAY.

Commissioners of Water Works.

**In the City of Erie,
Erie, Penn'a.**

**WILLIAM HARDWICK,
T. W. SHACKLETT,
CLARK OLDS.**

Officers.

**T. W. SHACKLETT,
President.**

**WILLIAM HIMROD,
Secretary and Treasurer.**

**GEO. C. GENSHEIMER,
Assistant Secretary.**

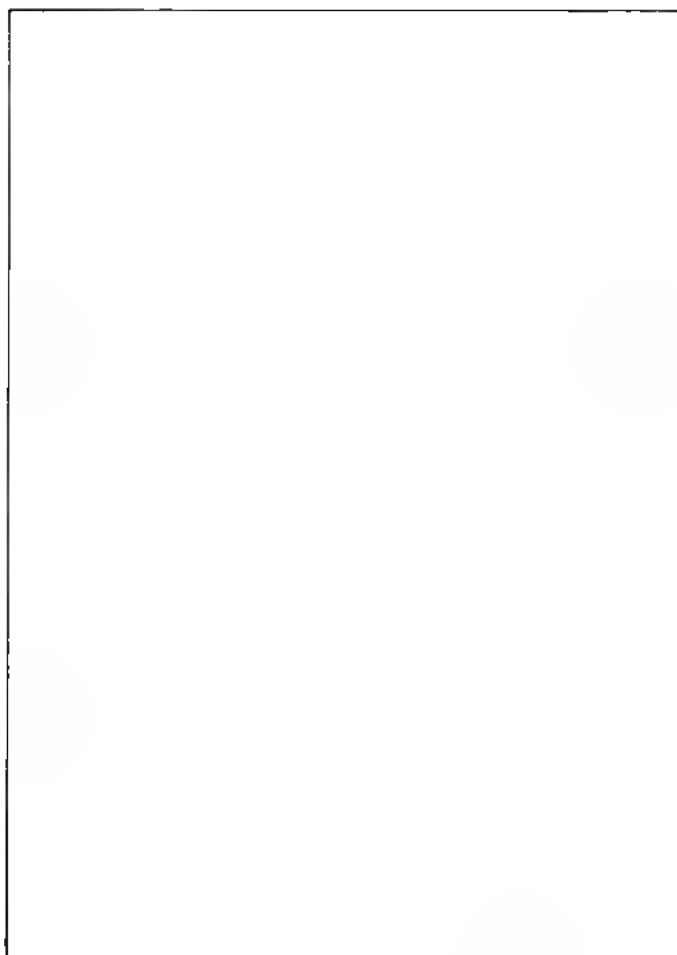
**F. A. ROTH,
Chief Engineer at Pumping Station.**

**R. T. WALKER,
Superintendent of Street Work.**

OFFICE—City Hall.

OFFICE HOURS—From 8:00 A. M. to 5:00 P. M.; on Mondays to 9:00 P. M.

REGULAR MEETINGS OF THE COMMISSIONERS—Every Saturday at 3:00 P. M., and the first of each month at 11:00 A. M., except when it occurs on Sunday, then they meet the following day, and every Monday at 7:30 P. M.



*G. W. F. SHERWIN,
Commissioner,
1879-1884.*

ANNUAL REPORT.

To the Councils of the City of Erie, Pa. :

GENTLEMEN:—

The Commissioners of Water Works, in the City of Erie, herewith present the thirty-first annual report of this department for the year 1897 :

RECEIPTS :

Balance in City Treasury Dec. 31, 1896.....	\$	635.29
From Water Rents :		
Assessments.....	\$ 98,101.04	
Meters.....	24,973.67	
Building Permits.....	838.19	
Special Permits	193.71	124,106.61
From other sources... ..		773.06
Total.....	\$	125,514.96

DISBURSEMENTS :

Construction.....	\$ 62,952.25
Maintenance.....	17,674.34
Operating.....	20,859.86
Accounting.....	8,350.43
Legal	235.00
Sundries.....	5.90
Sinking Fund	15,000.00
Balance in City Treasury Dec. 31, 1897.	437.18
Total.....	\$125,514.96

The receipts for water rents in the year 1896 amounted to \$121,442.94, and it will be seen that the revenues from that source for 1897 show an increase of \$2,663.67.

The demand for new connections has been somewhat less than usual, and shows a net gain of only 373, as compared with 574 for the previous twelve months.

The year has been marked by great activity, and such improvements, extensions and betterments as, in our judgment, were necessary for the benefit, comfort and convenience of our citizens, have been made as time and means permitted; and we have endeavored to plan everything with reference to the future, so that there will be but little trouble in adding to the system as the needs of the city may hereafter require.

The most important work accomplished has been the construction of a boiler house; the erection of a steel chimney and the installation of four batteries of improved high-pressure boilers.

The building is 100 feet long by 70 feet wide, and, besides the room necessary for the boilers, affords storage capacity for about eight hundred tons of coal.

The urgent need of such a storage place was fully demonstrated during the period of the late strikes in the mining districts, when we were compelled from time to time to buy, outside of our contract, high-priced coal in open market, in order to run the pumps, and often had great difficulty in procuring the requisite quantity.

Anxiety on this score is thus happily relieved, as we are now able to carry a supply of fuel sufficient for at least three months.

The contract for the building was awarded Messrs. Constable Brothers on their bid of \$12,648.00 and operations were begun in August last.

The Erie City Iron Works furnished the eight Horizontal Tubular Boilers, which are 18 feet long by 6 feet in diameter, of 150 Horse Power each, and are designed to carry a working pressure of 150 pounds to the square inch.

Improved results and a much more economical consumption of fuel are confidently assured from their use, as has already been demonstrated in the preliminary tests.

The contract price for these boilers was \$7,465.33.

Ample steam facilities are thus provided for years to come, and none of the boilers need now be used continuously, or forced, as we were compelled to do with the old ones.

After receiving bids for a brick chimney 175 feet high—which averaged about \$11,000—the Commissioners, who from the first inclined towards a steel chimney, decided to ask for proposals for a stack of this material, with the result that the Meehan Boiler and Construction Co., of Lowellville, Ohio, secured the work for the sum of \$4,000.00.

The chimney was erected without accident or delay, and is satisfactory in every detail.

It is a self-sustaining graceful structure 175 feet high with a clear inside diameter of 75 inches and is located on the north side of the new boiler house near its east end. The steel sheets of which it is made vary in thickness every 35 feet from three-quarters of an inch at the bottom to one-quarter of an inch at the top.

It is lined with fire-brick on the inside to a height of 80 feet.

Smoke stacks of this kind are coming into general use both in this country and abroad and are rapidly supplanting the old style brick chimneys.

The Jarecki Manufacturing Co. furnished the steam fittings, valves and principal connections.

We have also accomplished the laying of a 12-inch main on East Avenue from Twenty-first street to Twelfth street, and from thence westwardly on Twelfth street to Wayne street.

It was our intention, as stated in our last annual report, to do this work in the year 1898, as we have long recognized the needs of the extensive manufacturers in the south-eastern part of the city for a better water supply ; but upon the urgent request of the Erie City Iron Works, (whose fire insurance, then about to be renewed, would have been considerably affected) we began the work in August last, upon condition that payment of the boilers to be furnished by them would be deferred until the latter part of the coming January.

This important work was completed before the freezing weather set in.

In order to secure a better supply of water in the northern portions of the city, which is furnished mostly through four-inch mains, and at the same time to improve the general circulation in the eastern section, the Commissioners determined to lay a

20-inch main in Third Street, from Chestnut eastwardly, and have already put down the same as far as Sassafras Street.

It is the intention, as soon as spring opens, to continue this work as far as Parade street, (if possible) and from thence proceed up that thoroughfare with a 12-inch main to connect with a pipe of that size already in Seventh Street, and from thence continue out Seventh to Wayne, to which point, as has been stated before, a 12-inch pipe has already been laid.

A new compound-curve roadway, from the foot of Myrtle Street, has been constructed, by means of which the pumping station is much more ready of access, and affords a safe and easy carriage-way to the Works and Park for visitors—the number of which is constantly on the increase and attests the popularity of our improved and attractive surroundings.

Among the extraordinary expenditures during the past year is the item for cleaning and repairing the Reservoir, work upon which was begun in June and continued until it was completely and thoroughly overhauled and cemented with the best material that could be procured.

Regular and systematic monthly analyses of the water have been made throughout the year by Dr. Wm. P. Mason, Professor of Chemistry in the Rensselaer Polytechnic Institute, Troy, N. Y., and will be continued during the coming year.

The extension of the Intake Pipe to Big Bend, a distance of 8,307 feet, has undoubtedly been of incalculable benefit to the community, and that it has had a salutary effect upon its health is evidenced by the report of the Health Officer, wherein the number of deaths from Typhoid Fever (the disease most communicable by water) is given as follows:

1895.....	20 deaths.
1896.....	19 “
1897... ..	12 “

Notwithstanding this improved showing, we are still firmly of the opinion that at no distant day some effective measure or measures must be adopted to secure the bay from increasing and further pollution, as no community can reasonably expect to approach anything like the ideal in healthfulness, and at the same time deposit its sewerage and filth into the source from whence is taken the supply of drinking water.

If the intercepting sewer—at one time adopted and appropriated for by your predecessors—is not considered feasible, then a filtration plant becomes a necessity, as the only other plan for pure water—namely, the further extension of the intake to the open lake—is fraught with so many difficulties, such as the maintenance of the intake crib, etc., to say nothing of the great expense attendant upon an undertaking of such magnitude, that we have practically abandoned that line of procedure.

It is our judgment that all that portion of the intercepting sewer designed to take care of the waters of Mill Creek (into which is discharged about four-fifths of the entire sewage of the city) should be constructed as speedily as possible, in order to divert from the bay this great volume of polluted water which is a constant menace to the health of our community.

The Commissioners have endeavored, impartially, to carry out all the rules and regulations of this department as approved by your honorable bodies, and particularly with reference to the collection of water rents, and for the past six years have insisted upon prompt payment as required by the rules, or the penalty, as prescribed, has been enforced.

By a firm and unvarying insistence upon this point, upon the ground that it was unfair for those who did pay promptly to let others settle their bills when it pleased them, we have now no difficulty in collecting, within the specified time, the quarterly assessment of more than \$30,000; and there are very few instances where the extreme measure of shutting off the water for non-payment of rent (always a disagreeable duty for the Commissioners) has to be resorted to.

Notwithstanding the great need of funds to carry on the work of improvement and betterment of the plant, we have fulfilled our promise to you to pay the sum of \$15,000 to the Sinking Fund Commissioners on account of interest on the Water Works debt, and as further agreed, we will arrange to turn in the sum of \$25,000 in the year 1898.

We have made mention in previous communications to your honorable bodies of the needs of South Erie for a more adequate water supply.

This is in recognition of the claims made by residents of that portion of the city that they do not get the service or pressure

afforded citizens down town, while they are required to pay the same rates therefor.

The plan contemplated for their relief embraces the erection of another pump having a daily capacity of 8,000,000 gallons but capable of economically pumping 2,000,000 gallons—the estimated quantity required for South Erie.

This Engine is to be installed in the Gaskill pump room, in the space originally designed by our predecessors for such an addition when the building was constructed.

The two pumps in that room, having a combined capacity of 13,000,000 gallons, daily, will be so arranged as to supply, if need be, the present general system, as a relay to the Worthington 12,000,000-gallon engine ; or, the new pump may be used in the general system when the consumption of water does not exceed 8,000,000 gallons per day ; or, either one of them may be worked in the new and separate system for South Erie.

As a part of this plan, it is designed to lay a 24-inch main from the Pumping Station, via Walnut street to Nineteenth street ; thence (with a connection to the 30-inch main at Chestnut street) the line will turn westwardly to Cherry, and south on that street to Twenty-sixth street ; thence eastwardly to the Reservoir grounds, where a stand pipe 100 feet high will be erected, in which the water will be maintained at an altitude of 60 feet above the level of the Reservoir, and so connected that the overflow can go into that basin.

Thus, by a system of stop or check valves, the entire portion of the city south of Nineteenth street will be made a separate district and supplied as above described, and as satisfactory service guaranteed as in any other part of our municipality.

The first step toward this much needed improvement will be the purchase of a Pump as hereinbefore described, specifications for which are already in preparation, and it is expected to have it in operation by next October.

The work of laying the main will be undertaken at a later date.

It will be observed that we have not reckoned the old Cornish Bull Pumps in our calculations, as one of them is totally disabled, and the other, while in fair condition, is not an economical engine to run, owing to the great amount of coal consumed for every

thousand gallons of water pumped, which is more than double that required by the modern, up-to-date pumping engine.

We, however, have steam connections made to the old pump for use in case of an emergency.

It is our intention to dismantle the old boilers and dispose of them to the best advantage ; to enlarge the opening in the building so that coal cars of the largest size, and even a locomotive if necessary, may pass through to the coal storage bins without damage.

We will then convert the old boiler house into a work-shop and place of storage for supplies, meters, etc., thus saving the expense, as now, of renting quarters elsewhere.

All of which is respectfully submitted.

T. W. SHACKLETT,
WILLIAM HARDWICK,
CLARK OLDS,
Commissioners.



BENJAMIN WHITMAN,
Commissioner,
1881-1886.

Extract from Report of J. W. Wright, M. D., Health Officer of the City of Erie, for the Year 1897.

The use of Mill Creek and other streams as sewers and the discharge of sewage through them into the bay is most deplorable and immediate steps should be taken toward the building of an intercepting sewer and the establishment of a sewage disposal plant where all the sewage of the city could be received and go through a complete process of purification. The cities of Reading, Pa., and Lawrence, Mass., are notable examples of what can be accomplished in the way of obtaining pure water from sewage, bacteriological examination of water obtained after passing through the filter beds showing it to be practically free from all forms of bacteria and perfectly safe for drinking purposes.

The use of Mill Creek as an open sewer cannot be too strongly condemned. Nevertheless, if its use for such purposes is continued, the bottom of the stream should be paved with brick. This would be a step toward its complete enclosure, an event which must surely follow its future use as a public sewer. Paving the bottom of the stream with brick would give a smooth surface for the water to run over instead of a rough, uneven bottom, full of depressions in which filth accumulates to the detriment of the neighboring property and to the health of the people living in its vicinity.

Death rate of the City of Erie for the 22 years from 1876 to 1897, inclusive, with a tabulated statement of deaths from the principal contagious and infectious diseases during that period :

Year.	Tuber- culosis.	Typhoid	Diph- theria.	Scarla- tina.	Small- pox.	Total Number Deaths.	Rate per 1,000.
1876.....	44	14	6	2	.....	355	14.27
1877.....	52	10	4	2	.....	346	13.90
1878.....	60	6	9	10	.....	375	14.57
1879.....	49	8	10	8	.....	405	15.11
1880.....	55	6	46	11	.....	490	18.02
1881.....	60	17	56	2	.....	549	18.97
1882.....	52	21	53	.....	13	499	16.63
1883.....	41	8	13	10	.....	440	14.10
1884.....	58	10	36	12	.....	496	15.33
1885.....	65	15	10	3	.....	459	13.70
1886.....	53	12	6	48	.....	569	16.42
1887.....	59	10	11	24	.....	616	17.18
1888.....	58	9	12	3	.....	584	15.63
1889.....	57	16	14	3	.....	599	15.41
1890.....	91	26	13	10	.....	732	18.01
1891.....	66	24	25	14	.....	769	18.31
1892.....	83	24	224	2	.....	903	20.00
1893.....	51	15	95	7	.....	815	17.10
1894.....	50	15	58	60	.....	834	16.70
1895.....	59	20	23	12	.....	821	15.88
1896.....	64	19	10	2	.....	609	10.87
1897.....	68	12	4	2	.....	624	10.94

***Commissioners of Water Works, in the City of Erie, from
Organization to December, 31, 1897.***

The Commissioners of Water Works, in the City of Erie, are appointed by the Court of Common Pleas of Erie County, Penna., for a term of three years, one member being named annually, in May.

1867	*W. L. Scott,	Henry Rawle,	Wm. W. Reed,
1868	*John C. Selden,	Henry Rawle,	Wm. W. Reed,
1869	*John C. Selden,	Henry Rawle,	Wm. W. Reed,
1870	*John C. Selden,	Henry Rawle,	Wm. W. Reed,
1871	*†John C. Selden,	Henry Rawle,	Wm. W. Reed,
1872	Matthew R. Barr,	John Gensheimer,	Wm. W. Reed,
1873	Matthew R. Barr,	John Gensheimer,	Wm. W. Reed,
1874	Matthew R. Barr,	John Gensheimer,	Wm. W. Reed,
1875	Matthew R. Barr,	John Gensheimer,	Wm. W. Reed,
1876	Matthew R. Barr,	John Gensheimer,	Wm. W. Reed,
1877	Michael Liebel,	John Gensheimer	Wm. W. Reed,
1878	Michael Liebel,	*J. M. Bryant,	Wm. W. Reed,
1879	Michael Liebel,	*J. M. Bryant,	*G. W. F. Sherwin,
1880	Michael Liebel,	*J. M. Bryant,	*G. W. F. Sherwin,
1881	Michael Liebel,	Benjamin Whitman,	*G. W. F. Sherwin,
1882	Michael Liebel,	Benjamin Whitman,	*G. W. F. Sherwin,
1883	Michael Liebel,	Benjamin Whitman,	*G. W. F. Sherwin,
1884	Michael Liebel,	Benjamin Whitman,	*G. W. F. Sherwin,
1885	Michael Liebel,	Benjamin Whitman,	Geo. W. Starr,
1886	C. Kessler,	Benjamin Whitman,	Geo. W. Starr,
1887	C. Kessler,	C. J. Brown,	Geo. W. Starr,
1888	C. Kessler,	C. J. Brown,	Geo. W. Starr,
1889	C. Kessler,	C. J. Brown,	Geo. W. Starr,
1890	C. Kessler,	C. J. Brown,	Geo. W. Starr,
1891	C. Kessler,	C. J. Brown,	Wm. Hardwick,
1892	T. W. Shacklett,	C. J. Brown,	Wm. Hardwick,
1893	T. W. Shacklett,	C. J. Brown,	Wm. Hardwick,
1894	T. W. Shacklett,	C. J. Brown,	Wm. Hardwick,
1895	T. W. Shacklett,	†C. J. Brown,	Wm. Hardwick,
1896	T. W. Shacklett,	Clark Olds,	Wm. Hardwick,
1897	T. W. Shacklett,	Clark Olds,	Wm. Hardwick.

* Dead.

† Mr. Selden resigned before the expiration of his second term ; Mr. Barr was substituted by the other Commissioners, and afterward appointed by the Court.

‡ C. J. Brown resigned December 28, 1895, having been elected Treasurer of Erie County, Penna. Clark Olds was chosen by the other Commissioners, for the unexpired term, on the recommendation of the Court. January 2, 1896.

Officers of Water Works, from Organization to Dec. 31, 1897.

	President.	Secretary & Treasurer.	Assistant Secretary.
1867	Wm. W. Reed,	Wm. Brewster,	.....
1868	Wm. W. Reed,	Wm. Brewster,	.....
1869	Wm. W. Reed,	*J. C. Perkins,	.....
1870	Wm. W. Reed,	*J. C. Perkins,	.....
1871	Wm. W. Reed,	*J. C. Perkins,	.....
1872	Wm. W. Reed,	*J. C. Perkins,	.....
1873	Wm. W. Reed,	*J. C. Perkins,	.....
1874	Wm. W. Reed,	*J. C. Perkins,	.....
1875	Wm. W. Reed,	*J. C. Perkins,	.....
1876	Wm. W. Reed,	*J. C. Perkins,	.....
1877	Wm. W. Reed,	*J. C. Perkins,	.....
1878	Wm. W. Reed,	*J. C. Perkins,	.....
1879	Michael Liebel,	B. F. Sloan,	.....
1880	Michael Liebel,	B. F. Sloan,	.....
1881	*G. W. F. Sherwin,	B. F. Sloan,	.....
1882	*G. W. F. Shermin,	B. F. Sloan,	.....
1883	*G. W. F. Sherwin,	B. F. Sloan,	.....
1884	Benjamin Whitman,	B. F. Sloan,	Geo. C. Gensheimer,
1885	Benjamin Whitman,	B. F. Sloan,	Geo. C. Gensheimer,
1886	Benjamin Whitman,	B. F. Sloan,	Geo. C. Gensheimer,
1887	Geo. W. Starr,	B. F. Sloan,	Geo. C. Gensheimer,
1888	Geo. W. Starr,	B. F. Sloan,	Geo. C. Gensheimer,
1889	Geo. W. Starr,	B. F. Sloan,	Geo. C. Gensheimer,
1890	Geo. W. Starr,	B. F. Sloan,	Geo. C. Gensheimer,
1891	C. J. Brown,	Wm. Himrod,	Geo. C. Gensheimer,
1892	C. J. Brown,	Wm. Himrod,	Geo. C. Gensheimer,
1893	C. J. Brown,	Wm. Himrod,	Geo. C. Gensheimer,
1894	Wm. Hardwick,	Wm. Himrod,	Geo. C. Gensheimer,
1895	Wm. Hardwick,	Wm. Himrod,	Geo. C. Gensheimer,
1896	T. W. Shacklett,	Wm. Himrod,	Geo. C. Gensheimer,
1897	T. W. Shacklett,	Wm. Himrod,	Geo. C. Gensheimer,

* Dead.

NOTE.—Mr. Brewster was elected June 14, 1867 ; resigned October 26, 1868 ; served 1 year, 4 months and 12 days. Mr. Perkins was elected June 14, 1867 ; resigned March 30, 1878 ; same accepted December 21, 1878, to take effect January 1, 1879 ; served 10 years, 2 months and 5 days. Mr. Sloan was elected January 1, 1879 ; continued in office to June 1, 1891 ; served 12 years and 5 months. Mr. Himrod was appointed Secretary May 23, 1891, to take effect June 1, 1891. Mr. Gensheimer was appointed Assistant Secretary January 26, 1884.

GEO. W. STARR,
Commissioner,
1885-1890.

**Monthly Receipts from all Sources during the Year Ending
December 31st, 1897.**

Month.	Assessment.	Meter.	Special.	Plumbing.	Building.	Total.
January.....	\$22,388 15	\$ 5,698 05	\$ 38 00	\$251 63	\$ 15 50	\$ 28,391 33
February.....	1,679 44	24 46	8 66	51 36	30 70	1,794 62
March.....	323 88	475 09	8 92	237 96	51 53	1,097 38
April.....	21,499 84	5,197 92	13 00	1 52	46 90	26,759 18
May.....	2,373 95	332 07	19 67	50	227 60	2,953 79
June.....	486 97	432 85	13 50	1 67	78 92	1,013 91
July.....	22,391 93	5,409 97	11 73	21 09	70 23	27,904 95
August.....	2,139 07	67 35	19 84	58 90	28 24	2,313 40
September...	362 24	402 16	24 15	9 01	50 20	847 76
October.....	22,381 92	6,052 20	14 44	3 44	101 77	28,553 77
November...	1,983 15	863 72	11 05	.....	18 73	2,876 65
December....	90 50	17 83	10 75	135 98	117 87	372 93
Total.....	\$98,101 04	\$24,973 67	\$193 71	\$773 06	\$838 19	\$124,879 67

**Receipts from each Ward during the Year Ending December
31st, 1897.**

Wards.	Assessment.	Meter.	Special.	Plumbing.	Building.	Total.
First.....	\$13,260 20	\$ 4,252 93	\$ 55 34	\$ 76 01	\$204 62	\$ 17,849 10
Second.....	21,735 34	11,825 27	25 10	36 39	157 30	33,779 40
Third.....	23,885 63	3,464 02	50 10	369 80	188 70	27,958 25
Fourth.....	18,616 82	1,140 65	10 92	256 46	79 23	20,104 08
Fifth.....	8,945 06	3,091 19	25 50	4 80	63 76	12,130 31
Sixth.....	10,915 72	949 82	26 75	19 79	144 58	12,056 66
Seventh.....	742 27	249 79	.....	9 81	.....	1,001 87
Total	\$98,101 04	\$24,973 67	\$193 71	\$773 06	\$838 19	\$124,879 67

C. KESSLER,
Commissioner,
1886-1891.

Cash Account of Secretary and Treasurer of Commissioners of Water Works, in the City of Erie, for the Year Ending December 31, 1897.

Month.	Receipts.	Deposited with Treasurer City of Erie.	Balance in Office at Close of Business each month.
January.....	\$28,391 33	\$23,630 85	\$4,760 48
February.....	1,794 62	6,498 32	56 78
March.....	1,097 38	1,031 81	122 35
April.....	26,759 18	23,360 86	3,520 67
May.....	2,953 79	6,411 53	62 93
June.....	1,013 91	643 22	433 62
July.....	27,904 95	25,030 62	3,307 95
August.....	2,313 40	5,536 44	84 91
September.....	847 76	801 08	131 59
October.....	28,553 77	23,774 40	4,910 96
November.....	2,876 65	7,730 89	56 72
December.....	372 93	429 65	.....
Total.....	\$124,879 67	\$124,879 67	.....

Statement of Account with Treasurer of the City of Erie, for the Year Ending December 31, 1897.

Month.	Received from Secretary and Treasurer Commissioners of Water Works, in the City of Erie.	Paid on Warrants of Commissioners of Water Works, in the City of Erie.	Monthly Balances.
Balance from 1896....	\$ 635 29	.....	.....
January.....	23,630 85	\$ 14,781 51	\$ 9,484 63
February.....	6,498 32	3,688 92	12,294 03
March.....	1,031 81	2,991 86	10,333 98
April.....	23,360 86	3,234 31	30,460 53
May.....	6,411 53	10,727 46	26,144 60
June.....	643 22	14,473 12	12,314 70
July.....	25,030 62	10,777 00	26,568 32
August.....	5,536 44	9,571 48	22,533 28
September.....	801 08	7,001 02	16,333 04
October.....	23,774 40	19,350 77	20,756 97
November.....	7,730 89	15,951 49	12,536 37
December.....	429 65	12,528 84	437 18
Total.....	\$125,514 96	\$125,077 78	.....



CONRAD J. BROWN,
Commissioner,
1887-1895.

Amount Collected for Water Furnished annually, showing
Total Collections, also the Increase and Decrease
each Year since the Commencement
of the Water Works.

Year Ending Dec. 31st	RECEIVED.		ANNUAL.	
	Annually.	Totals.	Increase.	Decrease.
1869.....	\$ 4,264 47	.....	.....	.....
1870.....	9,237 30	\$ 13 501 77	\$ 4,972 83	.....
1871.....	18,138 08	31,639 85	8,900 78	.....
1872.....	21,652 68	53,292 53	3,514 60	.....
1873.....	25,560 40	78,852 93	3,907 72	.....
1874.....	27,938 90	106,791 83	2,378 50	.....
1875.....	29,639 38	136,431 21	1,700 48	.....
1876.....	31,048 76	167,479 97	1,409 38	.....
1877.....	32,276 57	199,756 54	1,227 81	.....
1878.....	29,636 01	229,392 55	.....	\$2,640 56
1879.....	33,343 20	262,735 75	3,707 19	.....
1880.....	37,385 00	300,120 75	4,041 80	.....
1881.....	40,385 87	340,506 62	3,000 87	.....
1882.....	43,818 73	384,325 35	3,432 86	.....
1883.....	48,269 89	432 595 24	4,451 16	.....
1884.....	51,852 78	484,448 02	3,582 89	.....
1885.....	53,550 35	537,998 37	1,697 57	.....
1886.....	58,725 00	596,723 37	5,174 65	.....
1887.....	67,121 92	663,845 29	8,396 92	.....
1888.....	73,197 03	737,042 32	6,075 11	.....
1889.....	81,110 68	818,153 00	7,913 65	.....
1890.....	87,279 96	905,432 96	6,169 28	.....
1891.....	93,891 55	999,324 51	6,611 59	.....
1892.....	105,527 03	1,104,851 54	11,635 48	.....
1893.....	111,247 43	1,216,098 97	5,720 40	.....
1894.....	111,821 94	1,327,920 91	574 51*
1895.....	116,927 63	1,444,848 54	5,105 69	.....
1896.....	121,442 94	1,566,291 48	4,515 31	.....
1897.....	124,106 61	1,690,398 09	2,663 67	.....

* Meter rates for water changed from a sliding scale of 6 cents to 10 cents per 1,000 gallons, according to amount consumed, to a flat rate of 6 cents per 1,000 gallons, causing a reduction in receipts of \$5,000.00.

STATEMENT OF WARRANTS ISSUED IN 1897.

JANUARY.

TO PAY VOUCHER.

Date. No.	Of	For	Amount.
2 8227	Pay Roll—Street Work.....	Disbursed by M. L. Whitley, Clerk.....	\$ 176 47
9 8228	Pay Roll—Street Work.....	Disbursed by M. L. Whitley, Clerk.....	206 21
11 8229	J. A. Paisley.....	Coal.....	393 01
8230	Reinhart Klaus.....	Labor.....	39 00
8231	Pay Roll—Street Work.....	Disbursed by M. L. Whitley, Clerk.....	195 26
8232	Thacher & Breymen.....	Laying Intake Pipe No. 2.....	3,036 00
8233	Lake Shore Foundry.....	Pipe.....	7,747 94
23 8234	Wm. F. Nick & Son.....	Varnish, Putty, Etc.....	1 70
8235	Saltsman & Austin.....	Cement and Pipe.....	2 03
8236	Hollands Mfg. Co.....	Tools and Repairs.....	3 87
8237	Atlantic Refining Co.....	Oil.....	4 00
8238	Brown & Thomas.....	Old Iron.....	4 28
8239	A. Brugger.....	Wooden Plugs.....	4 30
8240	Times-Graphic and Observer Co.....	Printing.....	4 50
8241	The Erie Dispatch.....	Paper.....	5 00
8242	Globe Iron Foundry Co.....	Castings.....	5 17
8243	C. Kessler.....	Brooms and Tallow.....	5 25
8244	Emil Streuber.....	Sole Leather.....	5 50
8245	E. McK. Whitley.....	Coke and Wood.....	10 00
8246	The Henesey Manufacturing Co.....	Leather Washers.....	10 50
8247	Wm. Schade & Co.....	Repairing Tools.....	11 67
8248	Lake City Machine Shop.....	Tools, Etc.....	12 40
8249	Herald Printing and Publishing Co.....	Books and Stationery.....	12 70
8250	Wm. Densmore & Co.....	Oats.....	14 00
8251	Henry R. Worthington.....	Engine Repairs.....	14 87
8252	Jarecki Manufacturing Co.....	Check Valves.....	15 50

JANUARY—Continued.

TO PAY VOUCHER.

<i>Date. No.</i>	<i>Of</i>	<i>For</i>	<i>Amount.</i>
23 8253	R. D. Wood & Co.....	Repairs for Fire Hydrants.....	18 00
8254	O. C. Thayer & Son.....	Fire-Brick and Clay.....	24 50
8255	Ashby & Vincent.....	Books and Stationery.....	24 10
8256	A. S. Pinney.....	Hardware.....	24 60
8257	Erie Machine Shop.....	Boiler Repairs, Etc.....	47 23
8258	W. P. Mason.....	Investigating Water.....	51 00
8259	James L. Firman.....	Teaming.....	54 29
8260	Erie Mfg. and Supply Co.....	Waste and Packing.....	66 98
8261	Erie Oil Works.....	Oil.....	79 75
8262	South Erie Iron Works.....	Castings.....	84 26
8263	Chas. S. Clarke, P. M.....	Postal Cards.....	100 00
8264	Hays Manufacturing Co.....	Fittings for Connections.....	116 03
8265	Geo. C. Gensheimer, Assistant Secretary.....	Sundries.....	90 79
8266	Pay Roll—Street Work.....	Disbursed by M. L. Whitley, Clerk.....	145 13
8267	National Lead Co.....	Lead Pipe and Solder.....	246 98
8268	Pay Roll—Street Work.....	Disbursed by M. L. Whitley, Clerk.....	146 20
8269	Pay Roll—Pumping Station.....	Disbursed by Geo. C. Gensheimer, Ass't Secretary...	613 88
8270	Pay Roll—Office and Inspectors.....	Disbursed by Geo. C. Gensheimer, Ass't Secretary...	906 66
Total.....			<u>\$14,781 51</u>

FEBRUARY.

TO PAY VOUCHER.

Date. No.	Of	For	Amount.
6 8271	George Schlindwein	Repairing Harness, etc.....	\$ 1 10
8272	Union Iron Works.....	Fire Door Liners.....	1 25
8273	H. F. Watson Company.	Labor	1 35
8274	Edison Construction & Supply Department.....	Incandescent Lamps, etc.....	1 73
8275	The Flickinger Roofing and Cornice Co., Ltd.....	Pump Valves and Labor.....	1 85
8276	Times-Graphic & Observer Co.....	Advertising.....	2 00
8277	Union Ice Company	Ice.....	2 44
8278	Erie Oil Works.....	Oil.....	3 75
8279	The Herald Printing & Publishing Co.....	Advertising.....	4 00
8280	Held, Gorenflo & Co.....	Advertising.....	4 00
8281	The Erie Dispatch.....	Advertising.....	4 00
8282	J. N. Blaisdell	Horse shoeing.	4 80
8283	Brown & Thomas.....	Old iron.....	4 88
8284	Lyman Felheim.....	Lumber and Labor.....	5 14
8285	C. Kessler.....	Soap and Salt.....	5 50
8286	S. S. Burton.....	Coal.....	5 50
8287	Thomas Pickering.....	Carriage hire.....	5 75
8288	Henry Shenk.....	Lumber and Labor.....	6 10
8289	Wm. F. Nick & Son.....	Paint, oil, and Brushes.....	6 17
8290	O. C. Thayer & Son.....	Cement.....	6 30
8291	John J. O'Brien	Printing.....	6 85
8292	Jarecki Manufacturing Co.....	Repairs for Meters and Tools.....	8 75
8293	Wm. Densmore & Co.....	Oats.....	13 25
8294	E. J. Riblet.....	Shop Rent.....	20 00
8295	Erie Machine Shop.....	Repairing Boilers.....	21 05
8296	South Erie Iron Works.....	Castings... ..	26 49
8297	W. DeWitt Himrod.....	Stationery.....	27 95
8298	Ashby & Vincent.....	Books and Stationery.....	33 65
8299	N. Y. & Penn'a Telephone & Telegraph Co.....	Rental of Telephones.....	56 25
8300	Geo. C. Gensheimer, Assistant Secretary.....	Sundries.....	61 56

FEBRUARY—Continued.**TO PAY VOUCHER.**

<i>Date.</i>	<i>No.</i>	<i>Of</i>	<i>For</i>	<i>Amount.</i>
6	8301	Erie Mfg. & Supply Co.....	Boiler Repairs, Waste and Packing.....	\$ 62 47
	8302	Hays Manufacturing Co.....	Fittings for Connections, etc.....	70 07
	8303	Atlantic Refining Co.....	Oil.....	123 22
	8304	J. A. Paisley.....	Coal.....	308 32
	8305	Jas. L. Firman.....	Teaming.....	6 95
	8306	Pay Roll—Street Work.....	Disbursed by M. L. Whitley, Clerk.....	151 90
13	8307	Pay Roll—Street Work.....	Disbursed by M. L. Whitley, Clerk.....	129 72
	8308	D. P. Murphy.....	Mason Work	163 25
20	8309	Geo. C. Gensheimer, Assistant Secretary.....	Sundries.....	4 75
	8310	Pay Roll—Street Work.....	Disbursed by M. L. Whitley, Clerk.....	151 79
	8311	Pennsylvania Company.....	Freight.....	25 00
27	8312	Pay Roll—Street Work.....	Disbursed by M. L. Whitley, Clerk.....	146 50
	8313	T. W. Shacklett.....	Services as Commissioner.....	150 00
	8314	William Hardwick.....	Services as Commissioner.....	150 00
	8315	Clark Olds.....	Services as Commissioner.....	150 00
	8316	Pay Roll—Pumping Station.....	Disbursed by Geo. C. Gensheimer, Ass't Secretary..	634 91
	8317	Pay Roll—Office and Inspectors.....	Disbursed by Geo. C. Gensheimer, Ass't Secretary..	906 66
Total.....				\$ 3,688 92

MARCH.

TO PAY VOUCHER.

Date. No.	Of	For	Amount.
6 8318	Robt. J. Saltsman	Coal.....	\$ 2 50
8319	Herald Printing and Publishing Co.....	Stationery.....	3 65
8320	Edison Construction and Supply Department.....	Electric Light Fixtures.....	3 68
8321	South Erie Iron Works.....	Castings.....	8 40
8322	E. McK. Whitley.....	Coke and Wood.....	12 60
8323	J. N. Blaisdell.....	Horse Shoeing, December, 1896 and February, 1897.	16 20
8324	Dispatch Printing and Engraving Co., Limited.....	Printing and Paper.....	18 00
8325	G. J. Gebhardt.....	Coal.....	23 00
8326	Selden Brick Company.....	Brick.....	30 00
8327	O. C. Thayer & Son.....	Cement, Fire-Brick and Clay.....	34 75
8328	E. J. Riblet.....	Shop Rent, February and March, 1897.....	40 00
8329	Erie Mfg. and Supply Co.....	Packing, Tools, etc.....	50 10
8330	Erie Machine Shop	Boiler and Engine Repairs.....	72 13
8331	Hays Manufacturing Co.....	Pipe and Fittings.....	78 55
8332	Erie Oil Works.....	Oil.....	79 00
8333	J. A. Paisley	Coal.....	359 45
8334	Geo. C. Gensheimer, Assistant Secretary.....	Sundries.....	9 50
8335	Pay Roll—Street Work.....	Disbursed by M. L. Whitley, Clerk.....	135 51
8336	Geo. C. Gensheimer, Assistant Secretary.. ..	Sundries.....	4 15
8337	Pay Roll—Street Work.....	Disbursed by M. L. Whitley Clerk.....	136 05
8338	Geo. C. Gensheimer, Assistant Secretary.....	Sundries.....	2 94
8339	D. P. Murphy.....	Mason Work	25 75
8340	Pay Roll—Street Work.....	Disbursed by M. L. Whitley, Clerk.....	137 87
8341	Chas. S. Clarke, P. M.....	Postage Stamps.....	15 00
8342	Pay Roll—Street Work.....	Disbursed by M. L. Whitley, Clerk.....	190 62
8343	Pay Roll—Pumping Station.....	Disbursed by Geo. C. Gensheimer, Ass't Secretary..	635 80
8344	Pay Roll—Office, Inspectors, etc.....	Disbursed by Geo. C. Gensheimer, Ass't Secretary...	866 66
	Total.....		\$ 2,991 86

APRIL.

TO PAY VOUCHER.

Date. No.	Of	For	Amount.
3 8345	Erie Steam Bending Works.....	Lumber.....	\$ 1 20
8346	Curtis Johnson.....	Lumber and Labor.....	1 37
8347	Thomson Meter Co.....	Repairing Meter.....	1 50
8348	The Flickinger Roofing and Cornice Co.. Ltd	Galvanized Iron and Labor.....	1 65
8349	Geo. Schlindwein.....	Repairing Harness.....	1 85
8350	The University of Pennsylvania Press.....	One Year's Subscription.....	2 00
8351	Zuck Hardware Co.....	Steel Rakes.....	2 00
8352	O. C. Thayer & Son.....	Cement and Lime.....	2 40
8353	A. Brugger.....	Stamper and Wooden Plugs.....	3 00
8354	Geo. C. Gensheimer, Assistant Secretary	Sundries.....	3 72
8355	Ashby & Vincent.....	Stationery.....	3 90
8356	Engineering News.....	One Year's Subscription....	5 00
8357	Jos. C. Dodsworth.....	Top Dressing.....	5 85
8358	J. N. Blaisdell.....	Horse Shoeing and Wagon Repairs	6 85
8359	National Meter Co.....	Repairing Meter.....	9 00
8360	S. P. Ensign.....	Insurance.....	11 00
8361	Win. Densmore & Co.....	Oats.....	13 00
8362	Lake Shore Foundry.....	Sprinkler Tees.....	18 12
8363	E. J. Riblet.....	Shop Rent.....	20 00
8364	Jarecki Manufacturing Co.....	Fittings and Valve.....	22 99
8365	James L. Firman.....	Teaming.....	23 55
8366	Harold M. Sturgeon.....	Insurance.....	34 00
8367	Erie Machine Shop.....	Boiler Repairs, etc.....	45 04
8368	Hays Manufacturing Co.....	Fittings, Pipe, etc.....	80 85
8369	Atlantic Refining Co.....	Oil.....	92 45
8370	Erie Mfg. and Supply Co.....	Waste and Packing, etc.....	102 80
8371	Momeyer & Graf.....	Coal.....	138 00
8372	J. A. Paisley.....	Coal.....	361 71
8373	Herald Printing and Publishing Co.....	Printing, Books and Stationery.....	408 33
8374	The People Publishing Association.....	Advertising.....	1 50

STATEMENT OF WARRANTS ISSUED IN 1897.

JANUARY.

TO PAY VOUCHER.

Date. No.	Of	For	Amount.
2 8227	Pay Roll—Street Work.....	Disbursed by M. L. Whitley, Clerk.....	\$ 176 47
9 8228	Pay Roll—Street Work.....	Disbursed by M. L. Whitley, Clerk.....	206 21
11 8229	J. A. Paisley.....	Coal.....	393 01
8230	Reinhart Klaus... ..	Labor.....	39 00
8231	Pay Roll—Street Work.....	Disbursed by M. L. Whitley, Clerk.....	195 26
8232	Thacher & Breymen.....	Laying Intake Pipe No. 2.....	3,036 00
8233	Lake Shore Foundry.....	Pipe.....	7,747 94
8234	Wm. F. Nick & Son.....	Varnish, Putty, Etc.....	1 70
8235	Saltsman & Austin.....	Cement and Pipe.....	2 03
8236	Hollands Mfg. Co.....	Tools and Repairs.....	3 87
8237	Atlantic Refining Co.....	Oil.....	4 00
8238	Brown & Thomas.....	Old Iron.....	4 28
8239	A. Brugger.	Wooden Plugs.....	4 30
8240	Times-Graphic and Observer Co.....	Printing.....	4 50
8241	The Erie Dispatch.....	Paper.....	5 00
8242	Globe Iron Foundry Co.....	Castings.....	5 17
8243	C. Kessler.....	Brooms and Tallow.....	5 25
8244	Emil Streuber.....	Sole Leather.....	5 50
8245	E. McK. Whitley.....	Coke and Wood.....	10 00
8246	The Henesey Manufacturing Co.....	Leather Washers.....	10 50
8247	Wm. Schade & Co.....	Repairing Tools.....	11 67
8248	Lake City Machine Shop.....	Tools, Etc.....	12 40
8249	Herald Printing and Publishing Co.....	Books and Stationery.....	12 70
8250	Wm. Densmore & Co.....	Oats.....	14 00
8251	Henry R. Worthington.....	Engine Repairs.....	14 87
8252	Jarecki Manufacturing Co.....	Check Valves.....	15 50

JANUARY--Continued.

TO PAY VOUCHER.

<i>Date. No.</i>	<i>Of</i>	<i>For</i>	<i>Amount.</i>
23 8253	R. D. Wood & Co.....	Repairs for Fire Hydrants.....	18 00
8254	O. C. Thayer & Son.....	Fire-Brick and Clay.....	24 50
8255	Ashby & Vincent.....	Books and Stationery.....	24 10
8256	A. S. Pinney.....	Hardware.....	24 60
8257	Erie Machine Shop.....	Boiler Repairs, Etc.....	47 23
8258	W. P. Mason.....	Investigating Water.....	51 00
8259	James L. Firman.....	Teaming.....	54 29
8260	Erie Mfg. and Supply Co	Waste and Packing.....	66 98
8261	Erie Oil Works.....	Oil	79 75
8262	South Erie Iron Works.....	Castings.....	84 26
8263	Chas. S. Clarke, P. M.....	Postal Cards.....	100 00
8264	Hays Manufacturing Co.....	Fittings for Connections.....	116 03
8265	Geo. C. Gensheimer, Assistant Secretary.....	Sundries.....	90 79
8266	Pay Roll--Street Work	Disbursed by M. L. Whitley, Clerk.....	145 13
8267	National Lead Co.....	Lead Pipe and Solder.....	246 98
8268	Pay Roll--Street Work.....	Disbursed by M. L. Whitley, Clerk.....	146 20
8269	Pay Roll--Pumping Station	Disbursed by Geo. C. Gensheimer, Ass't Secretary...	613 88
8270	Pay Roll--Office and Inspectors.....	Disbursed by Geo. C. Gensheimer, Ass't Secretary...	906 66
Total.....			<u>\$14,781 51</u>



WILLIAM HARDWICK,
Commissioner,
Since 1891-

FEBRUARY.

TO PAY VOUCHER.

<i>Date.</i>	<i>No.</i>	<i>Of</i>	<i>For</i>	<i>Amount.</i>
8271	6	George Schindwein	Repairing Harness, etc.	\$ 1 10
8272		Union Iron Works	Fire Door Liners	1 25
8273		H. F. Watson Company	Labor	1 35
8274			Incandescent Lamps, etc.	1 73
8275		Id.	Pump Valves and Labor	1 85
8276			Advertising	2 00
8277			Ice	2 44
8278		Erie Oil Works	Oil	3 75
8279		The Herald Printing & Publishing Co.	Advertising	4 00
8280		Held, Gorenfo & Co.	Advertising	4 00
8281		The Erie Dispatch	Advertising	4 00
8282		J. N. Blaisdell	Horse shoeing	4 80
8283		Brown & Thomas	Old iron	4 88
8284		Lyman Felheim	Lumber and Labor	5 14
8285		C. Kessler	Soap and Salt	5 50
8286		S. S. Burton	Coal	5 50
8287		Thomas Pickering	Carriage hire	5 75
8288		Henry Shenk	Lumber and Labor	6 10
8289		Wm. F. Nick & Son	Paint, oil, and Brushes	6 17
8290		O. C. Thayer & Son	Cement	6 30
8291		John J. O'Brien	Printing	6 85
8292		Jarecki Manufacturing Co.	Repairs for Meters and Tools	8 75
8293		Wm. Densmore & Co.	Oats	13 25
8294		E. J. Riblet	Shop Rent	20 00
8295		Erie Machine Shop	Repairing Boilers	21 05
8296		South Erie Iron Works	Castings	26 49
8297		W. DeWitt Hinrod	Stationery	27 95
8298		Ashby & Vincent	Books and Stationery	33 65
8299		N. Y. & Penn'a Telephone & Telegraph Co.	Rental of Telephones	56 25
8300		Geo. C. Gensheimer, Assistant Secretary	Sundries	61 56

FEBRUARY—Continued.

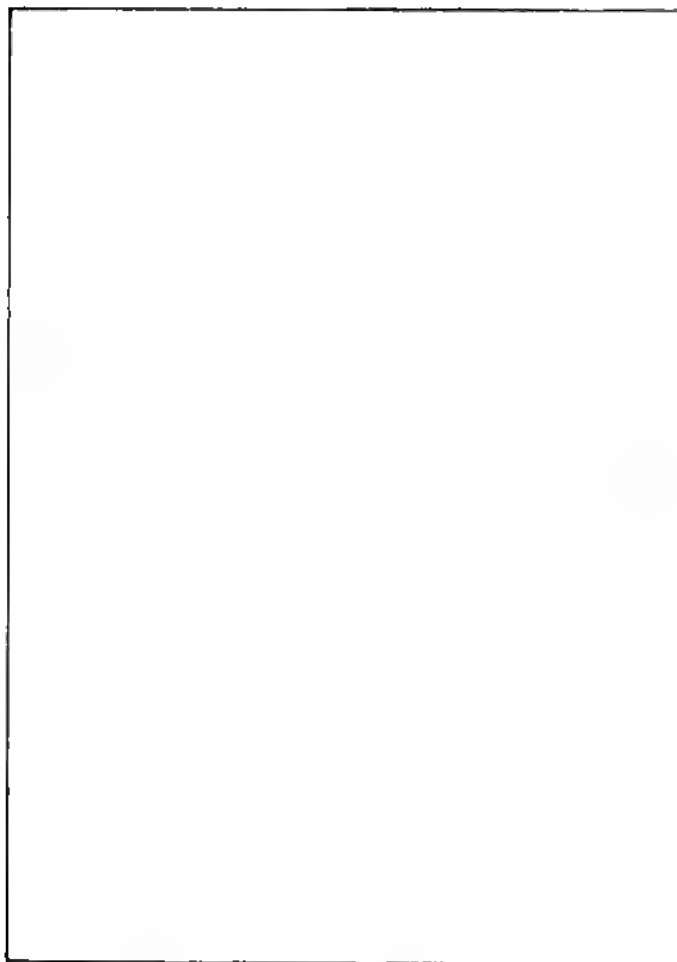
TO PAY VOUCHER.

Date.	No.	Of	For	Amount.
6	8301	Erie Mfg. & Supply Co.....	Boiler Repairs, Waste and Packing.....	\$ 62 47
	8302	Hays Manufacturing Co.....	Fittings for Connections, etc.....	70 07
	8303	Atlantic Refining Co.....	Oil.....	123 22
	8304	J. A. Paisley.....	Coal.....	308 32
	8305	Jas. L. Firman.....	Teaming.....	6 95
	8306	Pay Roll—Street Work.....	Disbursed by M. L. Whitley, Clerk.....	151 90
	8307	Pay Roll—Street Work.....	Disbursed by M. L. Whitley, Clerk.....	129 72
13	8308	D. P. Murphy.....	Mason Work	163 25
20	8309	Geo. C. Gensheimer, Assistant Secretary.....	Sundries.....	4 75
	8310	Pay Roll—Street Work.....	Disbursed by M. L. Whitley, Clerk.....	151 79
	8311	Pennsylvania Company.....	Freight.....	25 00
27	8312	Pay Roll—Street Work.....	Disbursed by M. L. Whitley, Clerk.....	146 50
	8313	T. W. Shacklett.....	Services as Commissioner.....	150 00
	8314	William Hardwick.....	Services as Commissioner.....	150 00
	8315	Clark Olds.....	Services as Commissioner.....	150 00
	8316	Pay Roll—Pumping Station.....	Disbursed by Geo. C. Gensheimer, Ass't Secretary..	634 91
	8317	Pay Roll—Office and Inspectors.....	Disbursed by Geo. C. Gensheimer, Ass't Secretary..	906 66
Total.....				\$ 3,688 92

MARCH.

TO PAY VOUCHER.

Date. No.	Of	For	Amount.
6 8318	Robt. J. Saltsman	Coal.....	\$ 2 50
8319	Herald Printing and Publishing Co.....	Stationery.....	3 65
8320	Edison Construction and Supply Department.....	Electric Light Fixtures.....	3 68
8321	South Erie Iron Works.....	Castings.....	8 40
8322	E. McK. Whitley.....	Coke and Wood.....	12 60
8323	J. N. Blaisdell.....	Horse Shoeing, December, 1896 and February, 1897.	16 20
8324	Dispatch Printing and Engraving Co., Limited.....	Printing and Paper.....	18 00
8325	G. J. Gebhardt.....	Coal.....	23 00
8326	Selden Brick Company.....	Brick.....	30 00
8327	O. C. Thayer & Son.....	Cement, Fire-Brick and Clay.....	34 75
8328	E. J. Riblet.....	Shop Rent, February and March, 1897.....	40 00
8329	Erie Mfg. and Supply Co.....	Packing, Tools, etc.....	50 10
8330	Erie Machine Shop	Boiler and Engine Repairs.....	72 13
8331	Hays Manufacturing Co.....	Pipe and Fittings.....	78 55
8332	Erie Oil Works.....	Oil.....	79 00
8333	J. A. Paisley	Coal.....	359 45
8334	Geo. C. Gensheimer, Assistant Secretary.....	Sundries.....	9 50
8335	Pay Roll—Street Work.....	Disbursed by M. L. Whitley, Clerk.....	135 51
8336	Geo. C. Gensheimer, Assistant Secretary.. ..	Sundries.....	4 15
8337	Pay Roll—Street Work.....	Disbursed by M. L. Whitley Clerk.....	136 05
8338	Geo. C. Gensheimer, Assistant Secretary.....	Sundries.....	2 94
8339	D. P. Murphy.....	Mason Work	25 75
8340	Pay Roll—Street Work.....	Disbursed by M. L. Whitley, Clerk.....	137 87
8341	Chas. S. Clarke, P. M.....	Postage Stamps.....	15 00
8342	Pay Roll—Street Work.....	Disbursed by M. L. Whitley, Clerk.....	190 62
8343	Pay Roll—Pumping Station.....	Disbursed by Geo. C. Gensheimer, Ass't Secretary..	635 80
8344	Pay Roll—Office, Inspectors, etc.....	Disbursed by Geo. C. Gensheimer, Ass't Secretary...	866 66
	Total.....		\$ 2,991 86



TURNER W. SHACKLETT,
Commissioner,
Since 1892-

APRIL.

TO PAY VOUCHER.

Date.	No.	Of	For	Amount.
3	8345	Erie Steam Bending Works.....	Lumber.....	\$ 1 20
	8346	Curtis Johnson.....	Lumber and Labor.....	1 37
	8347	Thomson Meter Co.....	Repairing Meter.....	1 50
	8348	The Flickinger Roofing and Cornice Co., Ltd.....	Galvanized Iron and Labor.....	1 65
	8349	Geo. Schindwein.....	Repairing Harness.....	1 85
	8350	The University of Pennsylvania Press.....	One Year's Subscription.....	2 00
	8351	Zuck Hardware Co.....	Steel Raket.....	2 00
	8352	O. C. Thayer & Son.....	Cement and Lime.....	2 40
	8353	A. Brugger.....	Stamper and Wooden Plugs.....	3 00
	8354	Geo. C. Gensheimer, Assistant Secretary.....	Sundries.....	3 72
	8355	Ashby & Vincent.....	Stationery.....	3 90
	8356	Engineering News.....	One Year's Subscription.....	5 00
	8357	Jos. C. Dodsworth.....	Top Dressing.....	5 85
	8358	J. N. Blaisdell.....	Horse Shoeing and Wagon Repairs.....	6 85
	8359	National Meter Co.....	Repairing Meter.....	9 00
	8360	S. P. Ensign.....	Insurance.....	11 00
	8361	Win. Densmore & Co.....	Oats.....	13 00
	8362	Lake Shore Foundry.....	Sprinkler Tecs.....	18 12
	8363	E. J. Riblet.....	Shop Rent.....	20 00
	8364	Iarecki Manufacturing Co.....	Fittings and Valve.....	22 99
	8365	.....	Teaming.....	23 55
	8366	.....	Insurance.....	34 00
	8367	.....	Boiler Repairs, etc.....	45 04
	8-68	.....	Fittings, Pipe, etc.....	80 85
	8369	Atlantic Refining Co.....	Oil.....	92 45
	8370	Erie Mfg. and Supply Co.....	Waste and Packing, etc.....	102 80
	8371	Momeyer & Graf.....	Coal.....	138 00
	8372	J. A. Paisley.....	Coal.....	361 71
	8373	Iterald Printing and Publishing Co.....	Printing, Books and Stationery.....	408 33
	8374	The People Publishing Association.....	Advertising.....	1 50

APRIL—Continued.

TO PAY VOUCHER.

Date, No.	For	Amount.
3 8375	Advertising.....	\$ 2 50
8376	Advertising.....	3 75
8377	Repairing Tools.....	3 00
8378	Advertising.....	3 75
8379	Advertising.....	4 00
8380	Advertising.....	4 20
8381	Glass.....	23 65
8382	Oil.....	30 00
8383	Barn Rent.....	68 50
8384	Times-Graphic and Observer Co.....	261 55
8385	Pay Roll—Street Work.....	2 50
10 8386	T. P. Rynder.....	19 65
8387	Wm. Schade & Co.....	370 64
17 8388	Pay Roll—Street Work.....	433 73
8389	Geo. C. Genshelmer, Assistant Secretary.....	25 24
8390	F. P. Gill.....	55 00
24 8391	Geo. C. Genshelmer, Assistant Secretary.....	30 20
8392	Pay Roll—Street Work.....	457 40
30 8393	The Lake Shore & Michigan Southern Ry. Co.....	20 82
	Freight.....	
	Total.....	\$ 3,234 31

MAY.
TO PAY VOUCHER.

Date	No.	Of	For	Amount.
1	8394	Pay Roll—Street Work.....	Disbursed by M. L. Whitley, Clerk.....	450 91
	8395	Pay Roll—Pumping Station.....	Disbursed by Geo. C. Gensheimer, Asst Secretary...	637 60
	8396	Pay Roll—Office and Inspectors.....	Disbursed by Geo. C. Gensheimer, Asst Secretary...	866 66
	8397	T. W. Shacklett.....	Services as Commissioner.....	150 00
	8398	Wm. Hardwick.....	Services as Commissioner.....	150 00
	8399	Clark Olds.....	Services as Commissioner.....	150 00
5	8400	Thacher & Breymen.....	Laying Intake No. 2.....	2,616 76
	8401	Raymond Lead Co.....	Lead.....	1,280 19
8	8402	R. T. Williams & Co.....	Sheet Lead.....	2 31
	8403	Robt. J. Saltsman.....	Coke.....	2 36
	8404	Wm. F. Nick & Son.....	Oil and Paint.....	2 75
	8405	Mehl & Sapper.....	Tools, Iron, etc.....	2 80
	8406	Schultz Bros.....	Grass Seed.....	3 00
	8407	Engineering News Publishing Co.....	Advertising.....	3 20
	8408	O. C. Thayer & Son.....	Cement.....	3 85
	8409	Thomson Meter Co.....	Repairing Meter.....	3 95
	8410	Curtis Johnson.....	Meter Box.....	4 50
	8411	The Dispatch Publishing Co.....	Advertising.....	4 80
	8412	J. N. Blaisdell.....	Oil.....	4 80
	8413	Held, Gorenflo & Co.....	Oil.....	5 40
	8414	Atlantic Refining Co.....	Advertising.....	5 84
	8415	The Herald Printing & Publishing Co.....	Advertising.....	6 00
	8416	David Schlosser.....	Lumber.....	6 98
	8417	Palace Hardware Store.....	Lawn Mower.....	7 00
	8418	E. McK. Whitley.....	Coke.....	7 68
	8419	Bay State Iron Works, Ltd.....	Boiler Repairs, etc.....	8 10
	8420	South Erie Iron Works.....	Castings.....	8 62
	8421	Henry Beckman & Son.....	Grass Seed.....	12 35
	8422	Ashby & Vincent.....	Book.....	12 75
	8423	Jarecki Manufacturing Co.....	Hydrant, etc.....	12 82

CLARK OLDS,
Commissioner,
Since 1896—

WATER WORKS, IN THE CITY OF ERIE.

33

MAY Continued. TO PAY VOUCHER.

Date.	No.	Of	For	Amount.
8	8424	Wm. Denmore & Co.	.....	\$ 13 00
	8425	.....	.....	17 64
	8426	.....	.....	19 10
	8427	.....	.....	20 00
	8428	.....	.....	20 40
	8429	.....	.....	37 55
	8430	.....	.....	39 26
	8431	.....	.....	50 67
	8432	.....	.....	56 25
	8433	.....	.....	80 82
	8434	.....	.....	84 18
	8435	.....	.....	112 42
	8436	.....	.....	125 00
	8437	.....	.....	195 78
	8438	.....	.....	327 19
	8439	.....	.....	422 42
	8440	.....	.....	425 00
	8441	.....	.....	19 00
	8442	.....	.....	14 70
	8443	.....	.....	437 65
	8444	.....	.....	200 00
11	8445	.....	.....	9 30
15	8446	.....	.....	320 94
	8447	.....	.....	316 13
22	8448	.....	.....	769 43
31	8449	.....	.....	159 65
		Total.....	.....	\$10,727 46

REPORT OF THE COMMISSIONERS OF

JUNE.

TO PAY VOUCHER.

Date.	No.	Of	For	Amount.
1	8450	J. M. Dietley.....	Typewriting.....	10 00
	8451	Geo. C. Gensheimer, Assistant Secretary.....	Sundries.....	10 35
	8452	Lake Shore and Michigan Southern Ry. Co.....	Freight.....	22 10
	8453	William Himrod, Secretary and Treasurer.....	American Water Works Association.....	150 00
	8454	Pay Roll - Pumping Station.....	Disbursed by Geo. C. Gensheimer, Asst's Secretary.....	680 00
	8455	Pay Roll - Office Inspectors.....	Disbursed by Geo. C. Gensheimer, Asst's Secretary.....	866 66
6	8456	Pay Roll - Street Work.....	Disbursed by M. L. Whitley, Clerk.....	739 84
12	8457	Pay Roll - Street Work.....	Disbursed by M. L. Whitley, Clerk.....	607 34
	8458	Erie Sand and Gravel Co.....	Gravel.....	298 42
	8459	Frank P. Thayer.....	Use of Ground.....	5 00
19	8460	Jarecki Manufacturing Co.....	Castings.....	1 32
	8461	Bay State Iron Works, Limited.....	Castings.....	1 35
	8462	T. S. Buck.....	Castings.....	2 14
	8463	Wm. F. Nick & Son.....	Oil, etc.....	2 25
	8464	Fire and Water.....	One Year's Subscription.....	3 00
	8465	Engineering News Publishing Co.....	Manual American Water Works.....	3 00
	8466	The Flickinger Roofing and Cornice Co., Ltd.....	Galvanized Iron and Labor.....	3 23
	8467	John H. Walker.....	Books and Stationery.....	3 65
	8468	W. J. Butler, Agent.....	Plumbing, Labor and Material.....	4 10
	8469	Herald Printing and Publishing Co.....	Stationery.....	4 98
	8470	C. W. Nick.....	Paint and Varnish.....	5 10
	8471	Lake City Machine Shop.....	Tools.....	6 20
	8472	Constable Bros.....	Glass, etc.....	6 80
	8473	Union Iron Works.....	Hoods, etc.....	7 70
	8474	J. N. Blaisdell.....	Horse Shoeing.....	8 00
	8475	David Schlosser.....	Lumber.....	11 09
	8476	Murphy Bros.....	Tools.....	11 50
	8477	Ashby & Vincent.....	Books and Stationery.....	12 45
	8478	Mehl & Sapper.....	Hardware and Tools.....	13 99
	8479	Geo. C. Gensheimer, Assistant Secretary.....	Sundries.....	14 78

JUNE—Continued.

TO PAY VOUCHER.

Date. No.	Of	For	Amount.
19 8480	Zuck Hardware Co.....	Tools.....	\$ 16 15
8481	Hays Manufacturing Co.....	Fittings for Connections.....	17 27
8482	Lake Shore Brick Works.....	Brick.....	18 00
8483	E. J. Riblet.....	Shop Rent.....	20 00
8484	Erie Machine Shop.....	Boiler and Engine Repairs.....	26 40
8485	Henry Beckman & Son..	Grass Seed, etc.....	33 80
8486	J. A. Paisley	Coal.....	37 01
8487	Schultz Bros.....	Brooms, Pails, etc.....	37 58
8488	South Erie Iron Works..	Castings.....	38 43
8489	Atlantic Refining Co	Oil.....	92 72
8490	Henry Mayer.....	Repairing Pavements.....	102 71
8491	Union Water Meter Co.....	Meters.....	108 00
8492	Erie Mfg. and Supply Co.....	Packing, Tools, etc.....	137 83
8493	The J. L. Mott Iron Works.....	Drinking Fountains.....	166 25
8494	O. C. Thayer & Son.....	Cement.....	299 90
8495	R. G. Miller & Co.....	Coal.....	308 32
8496	Lake Shore Foundry.....	Pipe.....	418 20
8497	Pay Roll—Street Work.....	Disbursed by M. L. Whitley, Clerk.....	825 36
8498	Board of the Commissioners of the Sinking Fund.....	The Sinking Fund	7,500 00
8499	Wm. Schade.....	Blacksmithing.....	35 68
8500	The Mohawk Refining Co.....	Boiler Compound.....	37 63
8501	Pay Roll—Street Work.....	Disbursed by M. L. Whitley, Clerk.....	679 54
	Total.....		\$14,473 12

B. F. SLOAN,
Secretary and Treasurer,
1879 to June 1, 1891.

JULY.

TO PAY VOUCHER.

Date. No.	Of	For	Amount.
1 8502	T. W. Shacklett.....	Services as Commissioner.....	\$ 150 00
8503	Clark Olds.....	Services as Commissioner.....	150 00
8504	Pay Roll—Pumping Station.....	Disbursed by Geo. C. Gensheimer, Ass't Secretary..	680 00
8505	Pay Roll—Office and Inspectors.....	Disbursed by Geo. C. Gensheimer, Ass't Secretary..	866 66
8506	Pay Roll—Street Work.....	Disbursed by M. L. Whitley, Clerk.....	967 20
8507	Geo. C. Gensheimer, Assistant Secretary.....	Sundries.....	7 33
8508	R. G. Miller & Co.	Coal.....	338 72
8509	Mehl & Sapper.....	Hardware.....	1 90
8510	Zuck Hardware Co.. ..	Hardware.....	2 74
8511	Adams Bros.....	Meter Box.....	3 00
8512	Keystone Electric Co.....	Carbon Brushes.. ..	3 00
8513	Herald Printing and Publishing Co.....	Stationery.....	3 50
8514	Lyman Felheim	Lumber	5 14
8515	E. McK. Whitley.....	Coke	5 94
8516	Lake Shore Brick Works.....	Brick.....	6 50
8517	South Erie Iron Works.....	Castings.....	8 37
8518	J. N. Blaisdell.....	Horse Shoeing and Wagon Repairs.....	9 15
8519	Conrad J. Brown.....	Hay.....	11 25
8520	Wm. Densmore & Co	Oats.....	14 50
8521	C. Kessler.....	Brooms, Soap, etc.....	14 67
8522	Union Iron Works.....	Boiler Repairs.....	17 60
8523	Jas. L. Firman.....	Teaming.....	18 65
8524	Standard Brick Works.....	Brick.....	20 00
8525	E. J. Riblet.....	Shop Rent.....	20 00
8526	Valentine Schultz.. ..	Brooms, Pails, etc.....	27 00
8527	Erie Machine Shop.....	Boiler and Engine Repairs.....	31 40
8528	D. P. Murphy.....	Mason Work.....	31 50
8529	David Schlosser.....	Lumber.....	36 63
8530	George Schlindwein.....	Harness and Repairs.....	40 00
8531	Erie Mfg. and Supply Co.....	Waste, Packing, etc.....	48 27

July—Continued.

TO PAY VOUCHER.

<i>Date. No.</i>	<i>Of</i>	<i>For</i>	<i>Amount.</i>
10 8532	V. D. Eichenlaub.....	Repairing Cut in Pavement.....	\$ 49 68
8533	N. Y. and Penna. Telephone Co....	Telephone Rental.....	56 25
8534	A. S. Pinney.....	Hardware and Tools.....	85 51
8535	Bay State Iron Works, Limited.....	Boiler Repairs.....	89 00
8536	Hays Manufacturing Co.....	Fittings for Connections, etc.....	108 55
8537	Erie Oil Works.....	Oil.....	132 50
8538	Henry Shenk.....	Plans and Specifications.....	150 00
8539	Pay Roll—Street Work.....	Disbursed by Geo. C. Gensheimer, Ass't Secretary..	694 45
8540	O. C. Thayer & Son.....	Cement, Brick and Clay.....	2,229 95
8541	Adolph Brugger	Wooden Plugs.....	5 10
17 8542	J. O. Baker.....	Repairing Boat.....	4 90
8543	Constable Bros.....	Estimate on Boiler House No 2.....	270 58
8544	Pay Roll—Street Work.....	Disbursed by Geo. C. Gensheimer, Ass't Secretary...	611 23
8545	The Lake Shore & Michigan Southern Ry. Co.....	Freight.....	12 33
8546	Geo. C. Gensheimer, Assistant Secretary.....	Sundries.....	19 85
8547	F. A. Mizener.....	Coal.....	110 33
8548	Pay Roll—Street Work... ..	Disbursed by M. L. Whitley, Clerk.....	426 93
8549	Wm. Hardwick.....	Services as Commissioner.....	150 00
8550	Erie Sand and Gravel Co.....	Sand.....	198 92
8551	Pay Roll—Street Work.....	Disbursed by M. L. Whitley, Clerk.....	272 25
8552	Pay Roll—Pumping Station.....	Disbursed by Geo. C. Gensheimer, Ass't Secretary...	690 81
8553	Pay Roll—Office and Inspectors.....	Disbursed by Geo. C. Gensheimer, Ass't Secretary...	866 66
Total.....			<u>\$10,777 00</u>

AUGUST.

TO PAY VOUCHER.

Date.	No.	Of	For	Amount.
3	8554	Pennsylvania Company	Freight	\$ 5 00
3	8555	Pennsylvania Railroad Company	Freight	111 56
7	8556	Mehl & Sepper	Hardware	1 90
	8557	The	Advertising	3 00
	8558	The	Advertising	3 00
	8559	Curtis Johnson	Meter Boxes	5 50
	8560	Times Publishing Company	Advertising	5 70
	8561	Held, Gorenflo & Co	Advertising	5 80
	8562	The Herald Printing & Publishing Co.	Advertising	6 00
	8563	Lake Shore Brick Works	Brick	6 10
	8564	I. N. Blaisdell	Horse Shoeing	6 35
	8565	Wm. F. Nick & Son	Oils, etc.	6 40
	8566	South Erie Iron Works	Castings	8 46
	8567	Brown & Thomas	Iron Rail	9 00
	8568	The Cereal Supply Company	Oats	13 50
	8569	The Henesey Manufacturing Co.	Leather Washers	14 70
	8570	J. E. McCreary	Coal	15 26
	8571	Ashby & Vincent	Books and Stationery	20 25
	8572	E. J. Riblet	Shop Rent and Glass	21 50
	8573	Globe Iron Foundry Co.	Castings	33 03
	8574	Frank Senger	Stone	34 25
	8575	William Hoffman	Drawings and Blue Prints	35 00
	8576	Chas. S. Clarke, Postmaster	Postal Cards	40 00
	8577	Thos. H. Cole, Collector	Taxes in Sixth Ward	60 00
	8578	Erie Machine Shop	Boiler and Engine Repairs	63 39
	8579	Union Water Meter Company	Meters and Repairs	64 25
	8580	McCreary Coke Co.	Coal	73 57
	8581	Hays Manufacturing Co.	Fittings for Connections, etc.	94 26
	8582	Atlantic Refining Co.	Oil	117 84
	8583	Erie Mfg. & Supply Co.	Tools, Packing, Oil	130 07

*WILLIAM HIMROD,
Secretary and Treasurer,
Since June 1, 1891.*

AUGUST—Continued.

TO PAY VOUCHER.

Date. No.	Of	For	Amount.
7 8584	Pennsylvania Company.....	Freight.....	\$ 131 93
8585	R. G. Miller & Co.....	Coal.....	156 73
8586	Henry Herbst, Collector.....	Taxes in Fourth Ward.....	218 75
8587	Lake Shore Foundry.....	Pipe.....	277 74
8588	O. C. Thayer & Son.....	Cement and Fire Clay.....	850 20
8589	James L. Firman.....	Teaming.....	34 53
8590	Geo. C. Gensheimer, Assistant Secretary.....	Sundries.....	39 65
8591	Pay Roll—Street Work.....	Disbursed by M. L. Whitley, Clerk.....	394 57
8592	Constable Brothers.....	Estimate on Boiler House No. 2.....	1,000 00
14 8593	Geo. C. Gensheimer, Assistant Secretary.....	Sundries.....	4 10
8594	Pennsylvania Company.....	Freight.....	56 92
8595	Constable Brothers.....	Foundation for Boilers.....	255 85
8596	Pay Roll—Street Work.....	Disbursed by M. L. Whitley, Clerk.....	414 09
8597	The Henesy Manufacturing Co.....	Leather Washers.....	2 94
8598	A. B. Aitken.....	Damages, Flooding Cellar.....	13 65
8599	Joseph G. Seyboldt	Boiler Repairs.. ..	40 75
8600	The Lake Shore & Michigan Southern Ry. Co.....	Freight.....	123 34
8601	Pay Roll—Street Work.....	Disbursed by M. L. Whitley, Clerk.....	335 89
8602	Constable Brothers.....	Estimate on Boiler House No. 2.....	1,000 00
26 8603	F. A. Mizener.....	Coal.....	391 25
28 8604	Dispatch Printing & Engraving Co, Ltd.	Printing and Stationery.....	20 50
8605	The Lake Shore & Michigan Southern Ry. Co.....	Freight.....	37 82
8606	Pay Roll—Street Work....	Disbursed by M. L. Whitley, Clerk.....	470 18
8607	Constable Brothers.....	Estimate on Boiler House No. 2.....	2,289 61
8608	E J. Morton.....	Services.....	5 85
	Total.....		\$ 9,571 48

SEPTEMBER.

TO PAY VOUCHER.

Date.	No.	Of	For	Amount.
8609		T. W. Shacklett.....	Services as Commissioner.....	\$ 150 00
8610		Wm. Hardwick.....	Services as Commissioner.....	150 00
8611		Clark Olds.....	Services as Commissioner.....	150 00
8612		Pay Roll Pumping Station.....	Disbursed by John Kolb, Bookkeeper.....	710 97
8613		Pay Roll—Office and Inspectors.....	Disbursed by John Kolb, Bookkeeper.....	866 66
8614		Wm. F. Nick & Son.....	Alcohol, Beeswax, Etc.....	2 21
8615		A. S. Pinney.....	Hardware and Tools.....	4 00
8616		Mehl & Sapper.....	Hardware and Tools.....	5 11
8617		C. Kessler.....	Brooms, Twine, Etc.....	5 38
8618		Cold Spring Ice Co.....	Ice.....	5 68
8619		Emil Streuber.....	Valve Leather.....	6 37
8620		Ashby & Vincent.....	Books and Stationery.....	6 85
8621		E. J. Morton.....	Services.....	7 20
8622		J. N. Bladell.....	Horse Shoeing.....	8 00
8623		Constable Brothers.....	Glass, Lumber and Labor.....	13 15
8624		Lake City Machine Shop.....	Tools and Labor.....	13 20
8625		O. C. Thayer & Son.....	Cement, Fire Brick and Clay.....	19 20
8626		E. J. Riblet.....	Shop Rent.....	20 00
8627		Geo. C. Gensheimer, Assistant Secretary.....	Sundries.....	21 75
8628		Globe Iron Foundry Co.....	etc.....	32 58
8629		Erie Mfg. & Supply Co.....	etc.....	47 05
8630		James L. Firman.....	Blue Print and Patterns.....	56 89
8631		F. P. Gill.....	Valve Stems and Rubbers.....	57 00
8632		The Holly Manufacturing Co.....	Cylinder and Pipe.....	75 00
8633		Skinner Engine Company.....	Oil.....	92 58
8634		Erie Oil Works.....	Coal.....	105 50
8635		R. G. Miller & Co.....	Boiler and Engine Repairs.....	106 55
8636		Erie Machine Shop.....	Fittings for Connections.....	107 83
8637		Hays Manufacturing Co.....	Stop Valves.....	180 93
8638		R. D. Wood & Co.....	Stop Valves.....	184 62

SEPTEMBER—Continued.

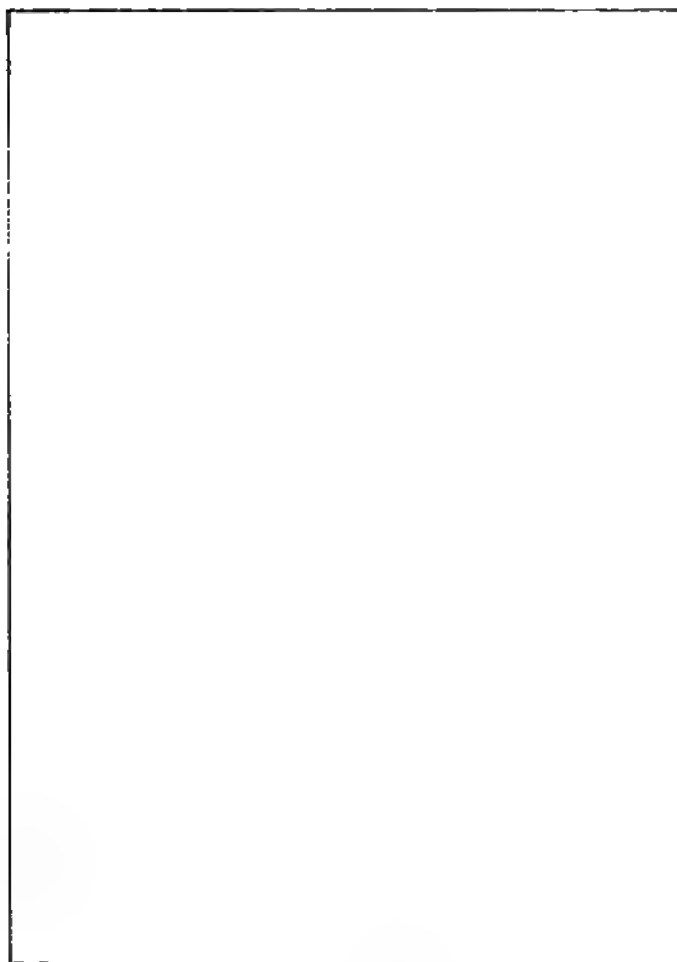
TO PAY VOUCHER.

Date.	No.	Of	For	Amount.
4	8639	Pay Roll	Street Work.....	489 80
	8640	Lyman Felhelm.....	Disbursed by M. L. Whitley, Clerk.....	5 29
	8641	J. M. Dunn.....	Lumber.....	8 25
	8642	Pay Roll—Street Work.....	Brick.....	482 25
11	8643	Pennsylvania Company.....	Disbursed by M. L. Whitley, Clerk.....	378 03
14	8644	Meehan Boiler & Construction Co.....	Freight.....	1,000 00
16	8645	Pennsylvania Railroad Co.....	On Contract Steel Plate Chimney.....	98 32
18	8646	Geo. C. Gensheimer, Assistant Secretary.....	Freight.....	6 48
	8647	Pay Roll—Street Work.....	Sundries.....	610 03
	8648	A. Evans.....	Disbursed by M. L. Whitley, Clerk.....	10 00
22	8649	Erie Heating & Plumbing Co.....	Stenograph Work.....	46 16
25	8650	Geo. C. Gensheimer, Assistant Secretary.....	Plumbing.....	6 23
	8651	Pay Roll—Street Work.....	Sundries.....	647 32
			Disbursed by M. L. Whitley, Clerk.....	
		Total.....		\$ 7,001 02

OCTOBER.

TO PAY VOUCHER.

Date.	No.	Of	For	Amount.
1	8652	Pennsylvania Company.....	Freight.....	4 00
	8653	The Lake Shore & Michigan Southern Ry. Co.....	Freight.....	90 12
	8654	Pay Roll—Pumping Station.....	Disbursed by Geo. C. Gensheimer, Asst Secretary...	720 00
	8655	Pay Roll—Office and Inspectors.....	Disbursed by Geo. C. Gensheimer, Asst Secretary...	866 66
	8656	Meehan Boiler and Construction Co.....	Disbursed by Geo. C. Gensheimer, Asst Secretary...	800 00
2	8657	Union Water Meter Co.....	On Contract Steel Plate Chimney.....	1 15
	8658	Keystone Rubber Works.....	Meter Repairs.....	1 76
	8659	August Jarecki.....	Ice.....	2 25
	8660	Union Ice Co.....	Ice.....	2 50



GEO. C. GENSHEIMER,
Assistant Secretary,
Since 1884—

OCTOBER—Continued.

TO PAY VOUCHER.

Date.	No.	Of	For	Amount.
8661	2	Henry A. Niemeyer.....	Material at Reservoir.....	5 00
8662		The Flickinger Roofing and Cornice Co., Ltd.....	Tools and Repairs.....	5 32
8663		Emil Streuber.....	Leather.....	5 33
8664		J. N. Blaisdell.....	Horse Shoeing.....	6 00
8665		Wm. Weber.....	Boiler Repairs.....	6 30
8666		Alhof Bros.....	Lumber, etc.....	6 36
8667		C. Kessler.....	Brooms and Soap.....	8 00
8668		South Erie Iron Works.....	Castings.....	8 55
8669		David Schlosser.....	Lumber.....	8 98
8670		Conrad J. Brown.....	Hay.....	10 54
8671		Lyman Felheim.....	Lumber.....	12 25
8672		Ashby & Vincent.....	Books.....	13 70
8673		The Cereal Supply Co.....	Oats.....	14 00
8674		E. J. Riblet.....	Shop Rent.....	20 00
8675		J. M. Dunn.....	Brick.....	30 25
8676		Frank Gunnison.....	Legal Service.....	35 00
8677		The Orient Electrical Co.....	Lamps.....	42 50
8678		O. C. Thayer & Son.....	Cement and Pipe.....	44 59
8679		Erie Machine Shop.....	Boiler and Engine Fittings for (to.....	45 80
8680		Hays Manufacturing Co.....	Castings.....	66 49
8681		Globe Iron Foundry Co.....	Tools, Packing, etc.....	74 29
8682		Er.....	Oil.....	96 85
8683		At.....	Coal.....	121 85
8684		J.....	Harness Repairs.....	292 35
8685		G.....	Hardware and Tools.....	1 15
8686		Dispatch Printing and Engraving Co., Ltd.....	Printing.....	4 23
8687		Times-Graphic and Observer Co.....	Printing and Stationery.....	27 00
8688		Pay Roll—Street Work.....	Disbursed by M. L. Whitley, Clerk.....	60 00
8689		Globe Iron Foundry Co.....	Castings.....	693 29
8690				28 00

REPORT OF THE COMMISSIONERS OF

OCTOBER--Continued.
TO PAY VOUCHER.

Date.	No.	Of	For	Amount.
9	8691	Geo. C. Genshelmer, Assistant Secretary	Sundries	\$ 13 94
	8692	F. A. Douglas	Office Fixtures	28 33
	8693	James L. Firman	Teaming	31 70
	8694	R. G. Miller & Co.	Coal	104 26
	8695	Pay Roll--Street Work	Disbursed by M. L. Whitley, Clerk	703 41
	8696	Constable Bros.	Estimate on Boiler House No. 2	3,794 40
13	8697	John Kelley	Services	80 00
16	8698	Dominick Flanagan	Cement and Sand	4 50
	8699	The Lake Shore & Michigan Southern Ry. Co.	Freight	42 29
	8700	Austin Separator Co.	Separators	170 86
	8701	Pay Roll--Street Work	Disbursed by M. L. Whitley, Clerk	703 48
20	8702	John Wahl Commission Co.	Pig Lead	991 64
21	8703	Meehan Boiler and Construction Co.	On Contract Steel Plate Chimney	1,200 00
23	8704	John W. Tait	Blacksmithing	7 00
	8705	Adolph Brugger	Wooden Plugs	14 95
	8706	Geo. C. Genshelmer, Assistant Secretary	Sundries	18 70
	8707	The Lake Shore & Michigan Southern Ry. Co.	Freight	78 49
	8708	Joseph Dudenhofer	Estimate on	687 50
	8709	Pay Roll--Street Work	Disbursed by M. L. Whitley, Clerk	699 14
	8710	Constable Bros	Estimate on	2,276 64
30	8711	Geo. C. Genshelmer, Assistant Secretary	Sundries	13 60
	8712	D. P. Murphy	Mason Work	25 30
	8713	T. W. Shacklett	Services as Commissioner	150 00
	8714	William Hardwick	Services as Commissioner	150 00
	8715	Clark Olds	Services as Commissioner	150 00
	8716	Pay Roll--Pumping Station	Disbursed by Geo. C. Genshelmer, Asst Secretary	640 00
	8717	Joseph Dudenhofer	Estimate for Setting Boilers	687 50
	8718	Pay Roll--Street Work	Disbursed by M. L. Whitley, Clerk	734 07
	8719	Pay Roll--Office and Inspectors	Disbursed by Geo. C. Genshelmer, Asst Secretary	866 66
		Total		\$19,350 77

NOVEMBER.
TO PAY VOUCHER.

Date. No.	Of	For	Amount.
6 8720	Keystone Brass Co.....	Meter Repairs.....	\$ 1 48
8721	Wm. F. Nick & Son.	Oil.....	1 75
8722	Lake Shore Rubber Co.....	Packing.....	2 40
8723	Schultz Bros.....	Rolled Oats.....	2 50
8724	The Flickinger Roofing & Cornice Co., Ltd.....	Tin and Screws.....	2 60
8725	Keystone Electric Company.....	Repairs to Dynamo.....	3 00
8726	Thomson Meter Co.....	Meter Repairs.....	3 00
8727	Henry Beckman & Son.....	Grass Seed, etc.....	3 70
8728	The Erie Window Glass Co.....	Glass.....	3 84
8729	Moore, Winschel & Co.....	Door Mats.....	4 00
8730	C. Kessler.....	Mops, Soap and Wicking.....	4 25
8731	Lyman Felheim.....	Meter Box, etc.....	4 40
8732	The Dispatch Publishing Co.....	Advertising.....	4 80
8733	Henry J. Sevin.....	Mounting Map and Frame.....	5 00
8734	Times Publishing Company.....	Advertising.....	5 25
8735	Held, Gorenflo & Co.....	Advertising.....	5 50
8736	Herald Printing & Publishing Co.....	Advertising and Stationery.....	6 75
8737	Standard Brick Works.....	Brick.....	7 00
8738	J. N. Blaisdell.....	Horse Shoeing and Wagon Repairs.....	7 00
8739	National Meter Company.....	Meter Repairs.....	8 25
8740	Atlantic Refining Co.....	Oil.....	8 40
8741	Hollands Mfg. Co.....	Tools.....	8 87
8742	David Schlosser.....	Lumber.....	9 52
8743	Jarecki Manufacturing Co.....	Tools and Fittings.....	10 75
8744	Wm. Densmore & Co.....	Oats.....	15 00
8745	E. J. Riblet.....	Shop Rent.....	20 00
8746	Union Ice Company.....	Ice.....	23 27
8747	—Void—.....	Not used.....	00 00
8748	J. M. Dunn.....	Brick.....	38 50
8749	O. C. Thayer & Son.....	Cement, Clay and Tile.....	47 95
8750	J. L. Firman.....	Teaming.....	55 16
8751	N. Y. & Penn'a Telephone & Telegraph Co.....	Telephone Rental.....	56 25

NOVEMBER—Continued.

TO PAY VOUCHER

Date.	No.	Of	For	Amount
6	8752	Erie Machine Shop.....	Boiler and Engine Repairs.....	\$ 78 75
	8753	The Fairbanks Company.....	Inspirator.....	90 00
	8754	Erie Oil Works.....	Oil.....	93 05
	8755	Ashby & Vincent.....	Books and Stationery.....	114 50
	8756	Union Water Meter Company.....	Meters.....	120 00
	8757	Jenkins Bros.....	Valves, Globe and Check.....	150 40
	8758	Erie Mfg. & Supply Co.....	Tools, Packing, etc.....	274 62
	8759	R. D. Wood & Co.....	Valves and Fire Hydrants.....	466 21
	8760	Globe Iron Foundry Co.....	Castings.....	519 88
	8761	Geo. C. Gensheimer.....	Sundries.....	34 48
	8762	Do.....	Fittings for Connections.....	73 01
	8763	Do.....	Lumber.....	193 68
	8764	Robert T. Walker.....	Rent of Barn.....	30 00
	8765	Pay Roll Street Work.....	Disbursed by M. L. Whitley, Clerk.....	674 94
	8766	Board of Commissioners of the Sinking Fund.....	The Sinking Fund.....	7,500 00
13	8767	John W. Tait.....	Blacksmithing.....	8 35
	8768	Do.....	Teaming.....	9 30
	8769	Do.....	Freight.....	16 65
	8770	Do.....	Disbursed by M. L. Whitley, Clerk.....	630 94
20	8771	Do.....	Disbursed by M. L. Whitley, Clerk.....	726 86
	8772	David F. Snell.....	Services.....	45 00
	8773	Pennsylvania Company.....	Freight.....	13 45
24	8774	Do.....	Estimate for Setting Boilers.....	1 473 55
27	8775	Do.....	Labor.....	19 35
	8776	Austin Separator Co.....	Separator.....	58 59
	8777	Geo. C. Gensheimer, Assistant Secretary.....	Sundries.....	67 45
	8778	Wm. Schade.....	Work on Boilers and Engines.....	79 17
	8779	Pay Roll Street Work.....	Disbursed by M. L. Whitley, Clerk.....	513 51
	8780	Pay Roll—Pumping Station.....	Disbursed by Geo. C. Gensheimer, Asst Sec'y.....	665 00
30	8781	Pay Roll—Office and Inspectors.....	Disbursed by Geo. C. Gensheimer, Asst Sec'y.....	866 66
		Total.....		\$15,931 49

DECEMBER.

TO PAY VOUCHER.

Date. No.	Of	For	Amount.
4 8782	A. S. Pinney.....	Hardware and Tools	1 90
8783	Thomson Meter Co.....	Repairing Meter.....	2 50
8784	The Flickinger Roofing and Cornice Co., Ltd.....	Repairing Lanterns.....	3 48
8785	Lake City Machine Shop	Repairing Tools.....	4 80
8786	Hollands Manufacturing Co.....	Tools.....	5 65
8787	Ashby & Vincent.....	Books and Stationery.....	8 35
8788	Conrad J. Brown.....	Hay.....	9 25
8789	Fries & Co.....	Cups.....	10 80
8790	J. N. Blaisdell.....	Horse Shoeing and Wagon Repairs.....	11 50
8791	Franklin Coal Co.....	Coal.....	11 50
8792	Union Ice Co.....	Ice.....	12 75
8793	Wm. Densmore & Co.....	Oats.....	15 00
8794	James L. Firman.....	Teaming.....	18 62
8795	The Lake Shore & Michigan Southern Ry. Co.....	Freight	18 64
8796	E. J. Riblet.....	Shop Rent.....	20 00
8797	O. C. Thayer & Son.....	Cement and Tile.....	25 48
8798	David Schlosser.....	Lumber	26 48
8799	Union Water Meter Co.....	Repairing Meter	27 25
8800	J. M. Dunn.....	Brick	51 70
8801	Momeyer & Graf.....	Coke and Wood	52 29
8802	Pennsylvania Company.....	Repairing Railroad Switch.....	70 60
8803	South Erie Iron Works	Castings.....	83 16
8804	Erie Machine Shop....	Repairs to Boilers and Engine.....	71 77
8805	John Coates ..	Castings, Shafting, etc.....	91 66
8806	Atlantic Refining Co.....	Oil.....	119 49
8807	Globe Iron Foundry Co.....	Castings.....	172 55
8808	Erie Mfg. and Supply Co.....	Gaskets, Packing, Valves, etc.....	220 48
8809	Hays Manufacturing Co.....	Fittings for Connections.....	238 00
8810	Youghiogeny River Coal Company.....	Coal.....	365 69
8811	Crane Company.....	Valves.....	435 35
8812	Pay Roll—Street Work.....	Disbursed by M. L. Whitley, Clerk.....	460 52
8813	Globe Iron Foundry Co.....	Castings.....	459 02

DECEMBER—Continued.

TO PAY VOUCHER.

Date.	No.	Of	For	Amount.
11	8814	Pay Roll—Street Work.....	Disbursed by M. L. Whitley, Clerk.....	\$ 424 77
18	8815	Geo. C. Gensheimer, Assistant Secretary.....	Sundries.....	17 73
	8816	Chas. B. Coates.....	Electric Lights.....	32 53
	8817	T. W. Shacklett.....	Services as Commissioner.....	150 00
	8818	William Hardwick.....	Services as Commissioner.....	150 00
	8819	Clark Olds.....	Services as Commissioner.....	150 00
	8820	Chas. S. Clarke, P. M.....	Postage Stamps.....	100 00
	8821	Pay Roll—Street Work.....	Disbursed by M. L. Whitley, Clerk.....	392 94
	8822	Pay Roll—Pumping Station	Disbursed by Geo. C. Gensheimer, Ass't Secretary....	665 00
	8823	Pay Roll—Office and Inspectors.....	Disbursed by Geo. C. Gensheimer, Ass't Secretary....	866 74
	8824	Constable Bros.....	Estimate on Boiler House No. 2.....	1,011 84
	8825	D. P. Murphy.....	Mason Work.....	90 00
22	8826	Sullivan & McMahon.....	Rope.....	21 45
24	8827	Pay Roll—Street Work.....	Disbursed by M. L. Whitley, Clerk.....	287 23
29	8828	Hollands Mfg. Co.....	Tools.....	1 34
	8829	Atlantic Refining Co.....	Oil.....	2 16
	8830	The Flickinger Roofing and Cornice Co., Ltd.....	Iron and Labor.....	2 42
	8831	Henry Beckman & Son.....	Rope, Etc.....	2 53
	8832	G. J. Gebhardt.....	Coke and Wood.....	2 55
	8833	F. S. Chambers.....	Horse Blankets.....	3 00
	8834	A. S. Pinney.....	Hardware.....	3 98
	8835	Times Publishing Co.....	Printing.....	4 50
	8836	Momeyer & Graf.....	Coke and Wood.....	4 80
	8837	Globe Iron Foundry Co.....	Castings.....	5 78
	8838	J. N. Blaisdell.....	Horse Shoeing.....	9 60
	8839	F. Dudenhoefer & Co.....	Brick.....	12 10
	8840	C. Kessler.....	Soap, Wicking, Tallow.....	12 57
	8841	Wm. Densmore & Co.....	Oats.....	15 00
	8842	Hays Manufacturing Co.....	Pipe and Fittings.....	19 03
	8843	Henry Mayer.....	Repairs to Asphalt Pavement.....	23 73
	8844	Erle Machine Shop.....	Repairs to Boilers, etc.....	24 89
	8845	Erle City Fertilizer Works.....	Bone Dust.....	30 00

DECEMBER—Continued.

TO PAY VOUCHER.		
<i>Date.</i>	<i>Of</i>	<i>For</i>
29 8846	Meehan Boiler and Construction Co.....	Painting.....\$ 53 31
8847	Henry R. Worthington.....	Pipe Sleeve.....53 75
8848	Erie Mfg. and Supply Co.....	Gaskets, Valves, Tools.....77 62
8849	Wm. Schade.....	Labor and Material on Boilers.....79 47
8850	R. D. Wood & Co.....	Valve.....90 00
8851	Erie Oil Works.....	Oil.....101 88
8852	J. O. Baker.....	Labor, etc., on Coal Bins.....107 06
8853	Jarecki Manufacturing Co.....	Labor and Material for Boilers.....1,404 17
8854	Lake Shore Foundry.....	Pipe.....2,376 65
8855	O. C. Thayer & Son.....	Cement and Lime.....27 40
31 8856	Pay Roll—Street Work.....	Disbursed by M. L. Whitley, Clerk.....249 29
8857	Pennsylvania Company.....	Freight.....229 97
8858	Geo. C. Gensheimer, Assistant Secretary.....	Sundries.....11 83
Total.....		\$12,528 84

RECAPITULATION, 1897.

No. Vouchers.	Month.	Amounts.
44	January	\$ 14,781 51
47	February.. ..	3,688 92
27	March.....	2,991 86
49	April.....	3,234 31
56	May.....	10,727 46
52	June.....	14,473 12
52	July.....	10,777 00
55	August.....	9,571 48
43	September.....	7,001 02
68	October.....	19,350 77
61	November.....	15,951 49
77	December.....	12,528 84
631	Total.....	\$125,077 78

DISBURSEMENTS.

DEPARTMENT.	ACCOUNT.	FOR THE YEAR 1897.			From Beginning of Works to December 31, 1897.
		Labor.	Material.	Total.	
Construction.	Ad., Books, Stationery and Printing.....	a \$ 80 75	\$ 96 34	\$ 177 09	470 35
	Boilers.....	a.....	.....	.....	3,364 13
	Boiler No. 7.....	f 132 48	888 68	1,021 16	1,026 02
	" 8.....	f 132 49	888 69	1,021 18	1,026 03
	" 9.....	f 132 45	888 74	1,021 19	1,026 04
	" 10.....	f 132 45	888 74	1,021 19	1,026 04
	" 11.....	f 131 71	862 95	994 66	999 51
	" 12.....	f 131 71	862 97	994 68	999 53
	" 13.....	f 131 69	862 96	994 65	999 49
	" 14.....	f 131 70	862 97	994 67	999 51
	Boiler House, No. 2.....	f 1,498 32	11,989 10	13,487 42	13,487 42
	Buildings and Grounds.....	f 700 31	169 47	869 78	87,750 56
	Civil Engineering.....	.....	.....	.....	8,554 80
	Connections.....	.....	2,394 01	1,363 07	116,369 13
	Drinking Fountains.....	d 68 43	216 78	285 21	1,577 08
	Electric Light Plant.....	a 90	32 79	33 69	756 67
	Engines and Boilers to January 1, 1891.....	.....	.....	.....	93,336 61
	Engines.....	a.....	.....	.....	15 05
	Engine No. 4.....	b.....	.....	.....	48,353 18
	" House No. 3.....	b.....	.....	.....	21,401 94
	Engine Room Furniture and Fixtures.....	.....	.....	.....	1,398 86
	Expense.....	a 29 46	1 00	30 46	371 41
	Fire Hydrants.....	81 16	192 74	273 90	26,581 19
	Fuel.....	" 69	25 00	25 69	202 93
	Gas Well.....	.....	.....	.....	8,148 59

WATER WORKS, IN THE CITY OF ERIE.

53

Construction.

Intake Pipe No. 1.....	62 27	207 61	269 88	4,682 52
" " 2.....	b 5,815 33	156 38	5,971 71	49,474 39
Interest and Discount.....	a	34 57	35 52	140,966 25
Light Oil Lamps, Wicks, Etc.....	a	749 14	749 14	99,420 95
" " ".....	8,334 93	14,074 17	22,409 10	208 70
Main, 30-inch.....	354 38	1,056 27	1,410 65	1,888 85
Meters.....	f	5 04	5 18	539,269 87
New Boiler Equipment.....	a	14	6 46	75,955 61
Office Furniture and Fixtures.....	b	17	.....	18,819 04
Oil and Tallow.....	b	.....	.....	1,074 03
Paving and Street Repairs.....	.....	.....	.....	15 96
Park Fountains.....	.....	.....	.....	4 07
Railroad Switch and Scales.....	.....	.....	.....	3,244 68
Reservoir.....	.....	.....	.....	2,918 92
Shop Rent.....	a 3 32	120 96	124 28	123,150 83
Steel Plate Chimney No. 1.....	g 100 35	3,113 74	3,214 09	388 76
Stop Valves.....	200 56	1,075 54	1,276 10	3,214 09
Superintendent's Expense.....	a	.....	.....	34,523 55
" " Stores.....	.....	.....	.....	52 82
Telephone and Telegraph.....	a	15	5 38	217 05
Tools and Repairs.....	161 86	103 24	265 10	18 32
Waste and Packing.....	g	14	5 06	4,969 11
Water Lots.....	e 165 33	35 28	200 61	5 20
Ad., Books, Stationery and Printing.....	a	78 18	82 04	15,834 66
Boilers to January 1, 1893.....	.....	.....	.....	324 66
Boiler No. 1.....	c 64 27	128 53	192 80	18,305 28
" " 2.....	c 74 52	186 57	261 09	1,033 74
" " 3.....	c 68 66	229 24	297 90	973 95
				1,307 70

Maintenance.

* This account discontinued in 1897, and the amount distributed, pro-rata, to Boilers Nos. 7 to 14, inclusive.
a Accounts started in 1891.
d Accounts started in 1894.
b Accounts started in 1892.
e Accounts started in 1895.
c Accounts started in 1893.
f Accounts started in 1896.
g Accounts started in 1897.

DISBURSEMENTS—Continued.

DEPARTMENT.	ACCOUNT.	FOR THE YEAR 1897.			From Beginning of Works to December 31, 1897.
		Labor.	Material.	Total.	
Maintenance.	Boiler No. 4.....	c \$ 58 77	\$ 133 64	\$ 192 41	\$ 1,081 09
	" " 5.....	c 47 83	79 30	127 13	707 40
	" " 6.....	c 32 76	51 51	84 27	542 30
	Boiler House No. 1.....	c 37	13 43	13 80	538 17
	Buildings and Grounds.....	a 415 48	134 82	550 30	7,751 78
	Connections.....	1,324 76	213 30	1,538 06	11,292 28
	Drinking Fountains.....	d 39 01	29 20	68 21	145 21
	Electric Light Plant.....	b 1 19	43 36	44 55	315 85
	Engines to January 1, 1893.....				13,402 04
	Engine No. 1.....	c.....			115 53
	" " 2.....	c 46 23	46 28	92 51	402 60
	" " 3.....	c 5 95	158 16	164 11	650 79
	" " 4.....	d 81 67	444 37	526 04	1,945 94
	Engine House No. 1.....	c 47	17 24	17 71	1,021 67
	" " 2.....	c 3 17	20 44	23 61	1,322 25
	" " 3.....	c 76 07	84 22	160 29	878 54
	Engineer's Stores.....	b.....			1 05
	Engine Room Furniture and Fixtures.....	a 34	12 35	12 69	190 96
	Expense.....	a 29 45	1 01	30 46	349 06
	Fire Hydrants.....	a 290 23	107 06	397 29	2,454 06
	Fuel.....	a 69	25 00	25 69	160 02
	Horse, Wagon and Cartage.....				4,695 76
	Intake Pipe No. 1.....	a 64 25	207 79	272 04	146 11
	Light, Oil, Lamps, Wicks, Etc.....	a.....			128 07
	Mains and Branches.....	722 90	25 06	25 75	20,360 52
			241 84	964 74	

WATER WORKS, IN THE CITY OF ERIE.

Maintenance.	Main, 30-inch.....	a.....	170 16	.....	289 44	.....	899 33
	Meters.....		2 57	.....	93 44	459 60	5,388 43
	Office Furniture and Fixtures.....	a.....	20	.....	6 99	7 19	380 44
	Oil and Tallow.....	b.....	.....	.....	.....	.....	20 92
	Paving and Street Repairs.....	a.....	.....	.....	.....	.....	449 94
	Railroad Switch and Scales.....	a.....	24 18	.....	59 07	83 25	699 59
	Reservoir.....		5,603 28	.....	4,303 17	9,906 45	35,022 64
	Shop Rent.....	a.....	3 32	.....	120 96	124 28	788 52
	Stand Pipe.....	c.....	3 46	.....	10	3 56	3,825 10
	Stop Valves.....		300 89	.....	18 23	319 12	5 379 90
Operating.	Superintendent's Expense.....	a.....	.....	.....	.....	.....	52 56
	“ Stores.....		.....	.....	.....	.....	396 52
	Tools and Repairs.....		183 59	.....	320 61	504 20	5,649 71
	Waste and Packing.....	b.....	14	.....	5 05	5 19	41 33
	Ad., Books, Stationery and Printing.....	a.....	81 21	.....	114 16	195 37	1,175 64
	Buildings and Grounds.....	b.....	1,640 06	.....	31 87	1,671 93	6,666 89
	Drinking Fountains.....	g.....	51 37	.....	.....	51 37	51 37
	Engineers and Firemen.....		6,432 46	.....	.....	6,432 46	130,578 27
	Engineers' Stores.....		.....	.....	.....	.....	2,348 57
	Electric Light Plant.....	b.....	.....	.....	.....	.....	34 68
	Expense.....	a.....	5 48	.....	29 12	34 60	1,060 25
	Fire Hydrants.....	b.....	406 88	.....	.....	406 88	599 25
	Flushing Sewers.....	g.....	9 61	.....	.....	9 61	9 61
	Fuel.....		142 66	.....	5,196 12	5,338 78	163,342 60
	Horse, Wagon and Cartage.....	d.....	.....	.....	.....	.....	54 81
	Inspectors.....	c.....	2,562 67	.....	.....	2,562 67	11,873 34
	Insurance.....		4 70	.....	171 37	176 07	1,528 03
	Light, Oil, Lamps, Wicks, Etc.....	a.....	1 94	.....	70 68	72 62	414 36
	Meters.....	b.....	394 77	.....	.....	394 77	3,208 55
	Oil and Tallow.....		37 60	.....	1,369 31	1,406 91	14,067 53

a Accounts started in 1891. c Accounts started in 1893. g Accounts started in 1897.
b Accounts started in 1892. d Accounts started in 1894

DISBURSEMENTS—Continued.

DEPARTMENT.	ACCOUNT.	FOR THE YEAR 1897.			From Beginning of Works to December 31, 1897,
		Labor.	Material.	Total.	
Operating.	Rent of Office.....	<i>b</i> \$ 01	\$ 15	\$ 16	\$ 603 09
	Reservoir.....	<i>b</i> 493 18	.....	493 18	2,798 25
	Stop Valves.....	<i>c</i> 125 49	.....	125 49	358 72
	Taxes—State, County and School.....	7 72	280 99	288 71	2,118 41
	Telegraph and Telephone.....	<i>a</i> 6 29	229 12	235 41	1,223 65
	Tools and Repairs.....	<i>a</i> 4 10	149 22	153 32	646 48
	Turning on and off Water.....	<i>g</i> 265 10	.....	265 10	265 10
	Waste and Packing.....	14 25	519 03	533 28	6,259 45
	Water Rent returned.....	30	10 87	11 17	1,077 65
	Ad., Books, Stationery and Printing.....	12 90	469 99	482 89	9,779 12
Accounting.	Expense.....	1 16	21 08	22 24	14,808 63
	Horse, Wagon and Cartage.....	<i>b</i>.....	.....	.....	17 30
	Postage.....	10 01	364 66	374 67	6,245 74
Sundries.	Salaries.....	7,470 63	.....	7,470 63	183,445 38
	City of Erie, Board of Com. of the Sinking Fund.....	.....	15,000 00	15,000 00	120,500 00
Legal.	City of Erie, Pa.....	<i>a</i>	5 90	5 90	12 31
	Court Costs.....	.....	.....	.....	478 40
	Counsel Fees.....	235 00	.....	235 00	3,493 53
	Expense.....	<i>a</i>.....	.....	.....	189 02
	Totals.....	\$52 096 98	\$72,980 80	\$125,077 78	\$2,403,653 59

a Accounts started in 1891. *e* Accounts started in 1897.
b Accounts started in 1892. *g* Accounts started in 1897.

RECAPITULATION.

DEPARTMENT.	FOR THE YEAR 1897.				From Beginning of Works to Dec. 31, 1897.
	Pro-Rata.	Labor.	Material.	Total.	
Construction.....	.50330482†	\$21,859 73	\$41 092 52	\$62,952 25	\$1,560,660 30
Maintenance.....	.14130679†	9,819 70	7,854 64	17,674 34	151,659 31
Operating.....	.16677510†	12,687 85	8,172 01	20,859 86	352,364 55
Accounting.....	.06676189†	7,494 70	855 73	8,359 43	214,296 17
Sundries.....	.11997254†	.....	15,005 90	15,005 90	120 512 31
Legal.....	.00187883†	235 00	.....	235 00	4,160 95
Totals.....	.99999997†	\$52,096 98	\$72 980 80	\$125,077 78	\$2,403,653 59

BALANCE SHEET—INDIVIDUAL LEDGERS.
ASSESSED ACCOUNTS.

1897.

1897.

Ward.	Balance from Dec. 31, 1896.	Assessments.	Additions.	Penalties.	Balance to Jan. 1, 1898	Total.	Balance from Dec. 31, 1896.	Deductions.	Cash.	Balance to Jan. 1, 1898.
First.....	\$ 60 19	\$13,316 43	\$ 656 56	\$ 86 49	\$ 43 34	\$ 14,163 01	\$ 23 47	\$ 784 02	\$13,260 20	\$ 95 32
Second....	101 25	21,548 90	1,050 74	80 83	62 64	22,844 36	29 80	978 16	21,735 34	101 06
Third.....	60 64	23,935 68	1,048 64	92 98	75 25	25,213 19	44 21	1,217 41	23,885 63	65 94
Fourth....	42 01	19,235 81	697 34	78 73	55 39	20,109 28	43 40	1,265 60	18,616 82	183 46
Fifth.....	58 27	8,945 79	466 73	53 79	26 91	9,551 49	12 59	533 31	8,945 06	60 53
Sixth.....	37 27	10,888 98	513 80	54 33	17 73	11,512 11	11 70	518 70	10,915 72	65 99
Seventh..	7 64	739 01	191 64	1 97	12	940 38	26 17	164 08	742 27	7 86
Total...	\$367 27	\$98,610 60	\$4,625 45	\$449 12	\$281 38	\$104,333 82	\$191 34	\$5,461 28	\$98,101 04	\$580 16

METER ACCOUNTS.

First.....	\$ 980 12	\$ 4,246 47	.....	\$ 1 07	.....	\$ 5,227 66	.....	\$16 37	\$ 4,252 93	\$ 958 36
Second....	3,143 51	12,677 93	.....	63 34	.....	15,884 78	.....	22 35	11,825 27	4,037 16
Third.....	873 05	3,619 92	.....	4 71	.....	4,497 68	.....	3 79	3,464 02	1,029 87
Fourth....	315 61	1,154 52	.....	1 18	.....	1,471 31	.....	5 39	1,140 65	325 27
Fifth.....	630 00	3,248 98	.....	3 23	.....	3,882 21	.....	4 77	3,091 19	786 25
Sixth.....	199 22	1,018 73	.....	1 18	.....	1,219 13	.....	.....	949 82	269 31
Seventh...	41 81	318 71	.....	75	.....	361 27	.....	20 31	249 79	91 17
Total...	\$6,183 32	\$26,285 26	.....	\$75 46	.....	\$32,544 04	.....	\$72 98	\$24,973 67	\$7,497 39

SPECIAL PERMITS.

First.....	.....	\$ 55 34	.....	.....	.....	\$ 55 34	.....	.....	\$ 55 34	.....
Second....	.....	25 10	.....	.....	.....	25 10	.....	.....	25 10	.....
Third.....	.....	50 10	.....	.....	.....	50 10	.....	.....	50 10	.....
Fourth ...	.....	10 92	.....	.....	.....	10 92	.....	.....	10 92	.....
Fifth.....	.....	25 50	.....	.....	.....	25 50	.....	.....	25 50	.....
Sixth.....	.....	26 75	.....	.....	.....	26 75	.....	.....	26 75	.....
Seventh...	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Total...	.....	\$193 71	.....	.....	.....	\$193 71	.....	.....	\$193 71	.....

BUILDING PERMITS.

[illegible]

PLUMBING ACCOUNTS.

First.....	\$ 49 67	\$ 26 34				\$ 76 01	\$ 83 54
Second....	6 18	119 93				36 39	\$ 24 40
Third.....	261 16	133 04				369 80	14 50
Fourth....	67 11	206 28				256 46	
Fifth.....		4 80				4 80	
Sixth.....	8 69	14 94				19 79	2 13
Seventh...	5 25	5 31				9 81	75
Total...	\$398 06	\$510 64				\$773 06	\$125 32
G'd Total.	\$6,948 65	\$126,438 40	\$4,625 45	\$524 58	\$281 38	\$124,879 67	\$8,202 87

Meter accounts are rendered at the close of each quarter, which will explain the large balance to January 1, 1898.



NEW BOILER HOUSE, AND SELF-SUSTAINING STEEL PLATE CHIMNEY.

1897. STATEMENT OF ACCOUNT WITH THE CITY OF ERIE, PENNA. 1897.

CITY OF ERIE, PENNA.--DR.

CASH--Paid Board of Commissioners of the Sinking Fund
INTEREST--On balances in Second National Bank, from October 1, 1896, to April 1, 1897
From April 1, 1897, to October, 1, 1897
On payments to Board of Commissioners of the Sinking Fund, June 19, 1897, to Dec. 31, 1897
Nov. 6, 1897, to Dec. 31, 1897
WATER--City Hall
Engine Houses
Fire Hydrants
Flushing Sewers
Fountains--Drinking
" --Park
Parks--Central--East
" --West
" --Lake Side--East
" --West
Sprinkling Streets, by Sup't of Streets
Balance

12,600 00	136 00	15,000 00
318 00	107 62	
266 76	374 38	
7,500 00	161 10	
7,500 00	46 03	581 51
	207 13	
	278 30	
	187 10	
	28,765 00	
	305 00	
	1,385 44	
	134 39	
	1,251 05	
50 00	100 00	
50 00		
17 90	189 90	
72 00	5 04	31,115 78
		46,697 29
		654,740 48
		701,437 77

CREDITS.

BALANCE-- December 31, 1896
INTEREST--On same to December 31, 1897
RENT-- Of offices one year

673 305 55
26,932 22
1,200 00
701,437 77

Balance due the City of Erie, Penna., Dec. 31, 1897..... \$654,740 48

Interest Oct 1, 1897. to April 1, 1898 126 80
Apr 1, 1898 to Oct 1, 1898 136 47
263 27

INTERIOR VIEW.—NEW BOILER HOUSE.

RESOURCES:		
PLANT NORTH OF FRONT STREET—		
Buildings and Grounds, including Piers to Intake No. 1.		
Boiler House No. 2, from January 1, 1897.....	106,903 44	
Engine House No. 3, from January 1, 1892.....	13,693 90	
	21,591 35	142,188 69
Boilers, from January 1, 1891.....	3,409 15	
Boilers Nos. 7 to 14 inclusive, from January 1, 1896.....	8,226 00	
New Boiler Equipment.....*		
Engines and Boilers to January 1, 1891	104,325 20	
Engine No. 4, from January 1, 1892.....	49,058 00	165,018 35
Electric Light Plant.....		766 90
Engine Room Furniture and Fixtures.....		1,549 20
Intake Pipes—No. 1	55,568 44	
“ —No. 2, from January 1, 1892.....	143,826 35	199,394 79
Railroad Switch and Scales.....		3,262 09
Steel Plate Chimney No. 1, from January 1, 1897.....		3,263 29
Water Lots, from January 1, 1895.....		15,997 75
		531,441 06
PLANT SOUTH OF FRONT STREET—		
Connections	125,225 76	
Drinking Fountains, from January 1, 1894.....	1,597 41	
Fire Hydrants.....	28,323 66	
Mains and Branches.....		
Main, 30-inch.....	587,575 20	
	83,327 29	
Meters.....		
Stop Valves.....	670,902 49	
	19,768 84	
	37,276 89	883,095 05
Office Furniture and Fixtures.....		1,090 14
Reservoir.....		137,629 35
		1,021,814 54
		1,553,255 60
PERSONAL-ACCOUNTS—Assessed.....		
	580 16	
Meter.....	7,497 39	
Plumbing	8,077 55	
	125 32	
Cash in hands of Treasurer City of Erie.....		8,202 87
		437,18
		8,640 05
		1,561,895 65
LIABILITIES:		
Accounts—City of Erie, Penna.....	654,740 48	
Credits on Assessed	281 38	655,021 86
Balance.....		906,873 79
		1,561,895 65

* Discontinued, amount included with Boilers Nos. 7 to 14 inclusive.

ASSESSMENTS FOR 1898.

\$

REPORT OF THE COMMISSIONERS OF

ITEMS ASSESSED.	FIRST WARD.		SECOND W'D.		THIRD WARD.		FOURTH W'D.		FIFTH WARD.		SIXTH WARD.		SEVENTH WD.		TOTALS.	
	No.	Amount.	No.	Amount.	No.	Amount.	No.	Amount.	No.	Amount.	No.	Amount.	No.	Amount.	No.	Amount.
Air Pumps.....	6	18 00	19	57 00	24	74 00	6	18 00	6	18 00	6	18 00	.....	.....	67	203 00
Bakeries.....	1	5 00	5	26 24	3	19 36	3	25 80	3	15 00	6	35 60	.....	.....	21	127 00
Banks.....	3	15 00	.....	.....	2	15 00	2	10 00	.....	.....	.....	.....	.....	.....	7	40 00
Barber Chairs.....	23	64 00	57	118 00	44	127 00	28	82 00	12	40 00	17	52 00	.....	.....	181	483 00
Bath Tubs.....	306	905 11	307	942 50	648	1,937 33½	546	1,578 00	117	353 00	167	490 50	3	13 50	2094	6,219 94½
Bicycle School.....	1	5 00	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	1	5 00
Billiard Tables.....	8	8 00	5	5 00	20	20 00	6	6 00	2	2 00	.....	.....	.....	.....	41	41 00
Blacksmith Fires.....	5	22 50	13	55 00	13	52 50	6	25 00	3	15 00	1	5 00	.....	.....	41	175 00
Boat Houses.....	2	15 00	.....	.....	.....	.....	1	10 00	.....	.....	.....	.....	.....	.....	3	25 00
Bonds.....	9	32 74	9	43 63	6	33 45	4	5 49	16	57 07	10	34 88	5	84 56	59	291 82
Bottling Works.....	1	5 00	2	16 00	.....	.....	2	20 00	.....	.....	.....	.....	.....	.....	5	41 00
Bowling Alleys.....	.....	.....	2	10 00	4	16 67	.....	.....	1	5 00	.....	.....	.....	.....	7	31 67
Churches & S. Schools	2	6 00	7	33 00	10	50 00	9	45 00	.....	.....	4	20 00	.....	.....	32	154 00
City Parks.....	2	67 90	.....	.....	.....	.....	2	122 00	.....	.....	.....	.....	.....	.....	4	189 90
Club Rooms.....	2	6 00	9	57 00	9	31 00	7	29 00	.....	.....	2	6 00	.....	.....	29	129 00
Cows.....	12	9 00	15	11 25	7	5 25	8	6 00	25	18 25	13	9 75	3	3 36	23	62 86
Eating Houses.....	3	18 00	8	40 00	21	99 66	4	20 00	2	10 00	1	5 00	.....	.....	39	192 66
Engine Houses.....	1	5 00	1	5 00	1	10 00	1	5 00	1	5 00	2	10 00	.....	.....	7	40 00
Elevators.....	1	120 00	3	10 00	1	60 00	1	6 00	.....	.....	.....	.....	.....	.....	6	196 00
Engine Horse Power..	107	185 67	226	369 69	126	215 00	74	54 37	47	56 70	36	62 00	30	49 50	646	992 93
Families.....	1333	6,658 51½	2376	11876.67	1817	9,085 00	1510	7,550 00	1061	5,301 66½	1270	6,336 67	44	330 00	9411	47,138 52½
Fish Markets.....	.....	.....	1	5 00	1	5 00	1	5 00	.....	.....	.....	.....	.....	.....	3	15 00
Fish Ponds.....	.....	.....	.....	.....	.....	.....	1	30 00	.....	.....	.....	.....	.....	.....	1	30 00
Fountains.....	1	625 52	.....	.....	4	21 00	3	700 53	.....	.....	.....	.....	.....	.....	8	1,347 05
" Drinking.....	2	30 00	2	30 00	1	15 00	1	15 00	2	30 00	1	15 00	1	22 50	10	157 50
Fountain Cuspidors...	.....	.....	2	6 00	1	3 00	.....	.....	.....	.....	.....	.....	.....	.....	3	9 00
Freight Houses.....	.....	.....	1	15 00	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	1	15 00
Glass Washers.....	.....	.....	.....	.....	.....	.....	1	24 00	.....	.....	.....	.....	.....	.....	1	24 00
Green Houses.....	.....	.....	.....	.....	.....	.....	4	10 35	.....	.....	.....	.....	.....	.....	24	35 87
Hand Basins.....	350	295 60½	428	393 00	891	760 16½	710	589 00	17	20 47	172	154 83½	3	5 05	2633	2,268 18½
Heating Boilers—H.P.	380	89 93½	264	66 00	670	163 16½	691	172 75	82	18 50	101	25 25	4	5 25	2188	535 60
Horses.....	177	246 00	321	427 00	404	569 00	341	424 00	189	262 00	212	316 00	11	21 00	1655	2,265 00
Laundries.....	1	5 00	3	15 00	3	15 00	2	10 00	.....	.....	1	5 00	.....	.....	10	50 00
Lodging Rooms.....	165	165 00	307	302 17	480	480 00	252	252 00	47	43 66½	68	37 16½	6	9 00	1325	1,289 00½
Meat Markets.....	7	30 00	16	87 00	16	96 00	11	51 00	9	51 00	9	48 00	.....	.....	68	363 00

WATER WORKS, IN THE CITY OF ERIE.

Milk Depots.....	1	5 00	.....	.....	2	10 00	2	8 00	.....	.....	.....	.....	.....	.....	.....	.....	5	23 00
Offices.....	66	188 41	77	319 00	104	359 00	90	401 00	2	6 00	4	12 00	.....	.....	.....	.....	343	1,285 41
Opera Houses.....	.....	.....	.....	.....	1	10 00	1	10 00	.....	.....	.....	.....	.....	.....	.....	.....	2	20 00
Photograph Rooms.....	.....	.....	.....	.....	4	20 00	1	5 00	.....	5 00	1	5 00	.....	.....	.....	.....	11	55 00
Printing Offices.....	3	40 00	2	35 00	4	35 00	2	10 00	.....	.....	.....	.....	.....	.....	.....	.....	11	120 00
Public Halls.....	7	35 00	11	60 00	12	64 66½	8	40 00	.....	10 00	5	25 00	.....	.....	.....	.....	45	234 66½
Saloons.....	11	55 00	41	205 00	31	155 00	15	75 00	12	60 00	8	40 00	1	7 50	.....	.....	119	597 50
Schools—Scholars.....	899	78 96½	1601	160 10	2009	200 90	879	87 90	1177	117 70	837	80 56½	.....	.....	.....	.....	7402	726 13½
Slaughter Houses.....	.....	.....	1	8 00	.....	.....	.....	.....	2	10 00	.....	.....	.....	.....	.....	.....	3	18 00
Steamer, U.S.Michig.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	1	30 00
Stores.....	63	256 00	143	530 00	183	800 00	88	347 00	.....	.....	.....	.....	.....	.....	.....	.....	557	2,206 50
Adjoining Lot.....	24	69 47	17	52 20	29	91 30	37	112 95	11	31 60	4	14 00	.....	.....	.....	.....	123	375 27
Curb.....	71	232 78	49	176 75	88	338 35	163	579 07½	17	56 70	32	115 95	.....	.....	.....	.....	424	1,512 35½
Hydrant.....	34	114 74	39	130 25	57	250 88	82	353.08½	30	111 20	64	307 59	.....	.....	.....	.....	307	1,272.24½
In House.....	35	119 45	95	310 10	50	162 60	41	134 65	70	233 96½	64	207 66	.....	.....	.....	.....	359	1,192 35½
Lawn.....	48	150 01	68	223 60	73	305 81	80	324 07½	60	180 00	34	140 26	.....	.....	.....	.....	383	1,367 51
Sill Cocks.....	328	898 42½	398	1,112 40	593	1,811 73	418	1,175.24½	291	857 26	341	1,050 86½	.....	.....	.....	.....	2377	7,130.82½
Total Sprinklers.....	540	1,584 87½	666	2,005 30	890	2,960 67	821	2,879 08	479	1,470 72½	539	1,836 32½	.....	.....	.....	.....	3973	12,850 57
Urinals.....	38	134 96½	70	223 00	101	342 50	66	196 00	13	48 66½	19	54 66½	.....	.....	.....	.....	307	999 80
Work Shops.....	21	79 00	51	190 00	49	157 00	26	81 00	4	16 00	9	31 00	.....	.....	.....	.....	161	561 50
Wash Tubs.....	92	125 66½	48	72 00	252	382 00	266	367 00	14	20 00	48	60 00	.....	.....	.....	.....	720	1,026 66½
Washers, Revolving.....	2	10 00	1	5 00	.....	.....	5	25 00	.....	.....	.....	.....	.....	.....	.....	.....	8	40 00
Total Wash Tubs.....	94	135 66½	49	77 00	252	382 00	271	392 00	14	20 00	48	60 00	.....	.....	.....	.....	728	1,066 66½
Non-Clos. Hopper.....	60	120 00	60	372 00	81	126 00	49	183 00	19	24 00	24	35 00	.....	.....	.....	.....	293	860 00
Self-Clos. Hopper.....	63	211 50	76	220 50	95	319 50	77	226 50	15	51 00	15	54 00	.....	.....	.....	.....	341	1,083 00
Pan or Tank.....	605	1,720 97	886	2,737 00	1500	4,440 16½	1062	2,930 50	238	734 50	325	982 00	.....	.....	.....	.....	4622	13,569 88½
Total Water Closets.....	728	2,052 47	1022	3,329 50	1676	4,885 66½	1188	3,340 00	272	809 50	364	1,071 00	.....	.....	.....	.....	5256	15,512 88½
Water Motors.....	.....	.....	.....	.....	3	18 00	5	45 00	.....	.....	1	5 00	.....	.....	.....	.....	9	68 00
Watering Troughs.....	.....	.....	6	60 00	2	20 00	1	10 00	9	90 00	2	20 00	.....	.....	.....	.....	20	200 00
Yacht.....	.....	.....	.....	.....	.....	.....	1	3 00	.....	.....	.....	.....	.....	.....	.....	.....	1	3 00
Grand totals for 1898.....	5382	14,303 85	8153	22,244 05	10,550	24,398 96	7704	19,861 27	3750	9,197 25	3972	11,055 21	157	701 56	.....	.....	39668	101,762 15
Grand totals for 1897.....	5207	13,268 38	8045	21,446 32	9979	23,820 94	7429	19 136 22	3744	8,849 42	3970	10,822 06	195	784 28	.....	.....	38569	98,127 62
Total gain for 1898.....	175	1,035 47	108	797 73	571	578 02	275	725 05	6	347 83	2	233 15	.....	.....	.....	.....	1137	3,717 25
Total loss for 1898.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	38	82 72
Net gain for 1898.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	1099	3,634 53

RATES FOR CITY WATER.

Approved by Select Council August 19, 1895. Approved by Common Council September 16, 1895. Approved by the Mayor September 21, 1895.

ARE ALL ANNUAL EXCEPT AS OTHERWISE INDICATED, AND PAYABLE QUARTERLY IN ADVANCE.

Air Pump.....	3 00
Bath Tub—Private (one family) first tub.....	3 00
Bath Tub—Private (one family) each additional tub.....	1 50
Bath Tub—Public, each tub.....	5 00
Bakery 1 of flour used (but no charge less than \$5).....	01
Barber chair, including hand basin.....	4 00
Barber 1 additional chair, including hand basin.....	2 00
Billiard Tables, each.....	1 00
Blacksmith Fire, first fire.....	5 00
Blacksmith Fire, each additional fire.....	2 50
Boarding House, (in addition to family rates) per room.....	1 00
Building Purposes, per bushel of lime; to be paid before work is begun.....	02
Butcher Stalls.....	3 00 to 15 00
Charitable Institutions, one-third annual rates.	
Cow.....	75
Condensing Roller for Steam Heating, (per season of 6 months) per horse power.....	25
.....	\$ 00 to 25 00
.....	5 00
Fire Protection Fixtures, testing same, thirty (30) minutes or less.....	3 00
Fire Protection Fixtures, testing same, one (1) hour or less, but more than thirty (30) minutes.....	5 00
Flushing Sewers, settling earth in ditches or purposes of like nature, per hour, or fractional part of an hour, each.....	5 00
Hand Basins in dwellings, hotels and schools, first basin.....	1 00
Hand Basins in dwellings, hotels and schools, each additional basin.....	50
Hand Basins in offices, stores and blocks, each.....	1 00
Hotels, (in addition to family rates) per room.....	1 00
Laundry, shop.....	5 00

RATES FOR CITY WATER—Continued.

Laundry, wash tub, stationary, each.....	2 00
Laundry, revolving washer, each.....	5 00
Livery Stable, per horse.....	3 00
Offices.....	3 00 to 10 00
Private Stable, one or two horses.....	2 00
Private Stable, each additional horse over two.....	1 00
Printing Offices.....	5 00 to 30 00
Public Halls.....	5 00 to 25 00
Saloons.....	5 00 to 25 00
School, per pupil (in addition to fixtures).....	10 00
Slaughter Houses.....	5 00 to 50 00
Stores, each.....	1 00
Streets or Lawns with Hose, Per Season:	
Inside lot, 41 feet front or less.....	5 00
For each additional foot front to either corner or inside lot.....	3 00
Steam Engines, ten hours per day, each Horse Power.....	05
Stores.....	2 50
Urinal, private, self-closing (one family).....	3 00 to 15 00
Urinal, private, not self-closing (one family).....	3 00
Urinal, public, self-closing.....	6 00
Urinal, public, not self-closing.....	3 00
Urinal, private or public, continuous flow.....	10 00
Wash Tub, stationary, first tub (one family).....	10 00 to 30 00
Wash Tub, stationary, each additional tub (one family).....	2 00
Water Closet, pan or tank (one family) private.....	1 00
Water Closet, pan or tank (one family) each additional water closet.....	3 00
Water Closet, pan or tank, public, each.....	1 50
Water Closet, hopper, (one family) private, for each water closet.....	5 00
Water Closet, hopper, public, for each water closet.....	6 00
Work Shop, ordinary use.....	10 00
	3 00 to 5 00

RATES FOR CITY WATER—Continued.

All other uses, when not metered, to be assessed by the Commissioners. The sprinkling season is from May 1st to November 1st in each year. There is no fractional part of a sprinkling season. It will cost as much to sprinkle but once at any time during the sprinkling season as it will to sprinkle each day at the prescribed hours during the entire season. Sprinkling must be confined to the hours between 5 and 8 A. M., 12 and 1 P. M., and 5 and 8 P. M., nor during said intervals more than one hour at a time. Persons who exceed one hour may be charged at fountain rates, or held liable for violation of the rules, at the option of the Commissioners. Water fixtures will be assessed for each and every purpose available, and for each family or establishment within the enclosure or separated only by a door, gateway, or other means of easy communications. No abatement of charges shall be allowed for vacancy of premises, except from the date that notice has been given at the office of the Commissioners of Water Works that they are unoccupied. The Commissioners may limit or stop the supply of water in cases of emergency and shut it off for repairs or extensions, they being the judges of the time and necessity. Neither the Commissioners nor the City of Erie shall be liable in damages for any in-sufficient supply of city water. For each and every violation of the rules and regulations of the Water Works, the offending party will be subject to a fine of not less than FIVE nor more than FIFTY DOLLARS.

Meter Rates.

Six (6) cents for each one thousand (1,000) gallons by meter measurement. Provided the minimum receipts per quarter shall be for a		
3/4-inch or less.....	\$3 75	2-inch.....\$10 00
1-inch.....	4 50	3-inch 18 75
1 1/8-inch	6 25	4-inch..... 38 75

Statement of Meters December 31, 1897.

KIND.	IN USE.										NOT IN USE.										TOTAL.																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																		
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Union.....	49	9	15	15	6	9	1	104	6</

A 1-inch Crown Meter was discovered to be a 3/4-inch meter.

KIND.	GOOD.										POOR.										TOTAL.																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																	
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Union.....	53	11	15	15	6	9	1	110

Statement of Work Done by Inspector No. 1 in 1897.

MONTH.	TURNED OFF ACCOUNT.			TURNED ON ACCOUNT.			INVESTIGATION.			TOTAL.
	Unpaid.	Vacancies.	Leaks and Waste.	Paid.	Occupied	New Houses.	Complaint.	Leaks and Waste.	New Work.	
January.....		45	1		28	7	59	2	94	236
February.....	2	23	1	1	33	9	15	*195	96	375
March.....		14	2		54	27	1	3	107	208
April.....		24			54	27	1	4	231	341
May.....	5	70		3	51	57	2	*252	263	705
June.....		13		4	36	31	3	2	228	317
July.....		50	1	1	31	25	1	2	153	265
August.....	13	20	1	5	38	22	4	4	66	175
September.....		18	1	3	30	26	4	*302		493
October.....	4	76			40	41	5	4	164	334
November.....	18	67	2	12	35	36	6	5	148	329
December.....		52			33	5	2	*332	195	639
Total.....	42	472	8	20	463	313	103	1,131	1,747	4,117

*On vacancies.

Statement of Work Done by Inspector No. 2 in 1897.

January.....					1			1		2
February.....					2	2				4
March.....		8	2		23		*4	1	12	50
April.....	3	16			24	1	*4	3	13	64
May.....								2		2
June.....										
July.....										
August.....										
September.....		1			2			1		4
October.....							1	5		6
November.....	6				1					7
December.....					1					1
Total.....	9	25	2		54	3	9	13	25	140

*Frozen.

Statement of Work Done by Inspector No. 3 in 1897.

January.....							3	1		4
February.....						2	2			4
March.....										
April.....		2			2	1		1		6
May.....	5	6			4	1		1		17
June.....					1		1			2
July.....										
August.....	8	2		2	12	8	1		3	36
September.....		2			6	8	1		11	28
October.....	3	3					3		1	10
November.....	5	2		1	1	1	63			73
December.....							2			2
Total.....	21	17		3	26	21	76	3	15	182

Statement of Work Done at Annual Inspection by Inspector No. 2 in 1897.

WARD.	NUMBER OF				NO. OF SPRINKLERS.					NUMBER OF		NO. OF WATER CLOSETS.				NUMBER OF					TOTAL.
	Premises Inspected.	Draw Cocks.	Hydrants.	Goose Necks.	Curb.	Hydrant.	Lawn.	Sill Cock.	Bath Tubs.	Wash Tubs.	Closing Hopper.	Non-Closing Hopper.	Pan or Tank.	Urinals.	Hand Basins.	Air Pumps.	Heating Boilers.	Manufact'g Engines.			
Third.....	1,832	2,355	170	1	88	57	73	593	648	252	95	81	1,500	101	891	24	39	16	8,816		
Fourth.....	1,489	1,685	246	13	163	82	80	418	546	271	77	49	1,062	66	710	6	32	6	7,001		
Sixth.....	1,209	1,262	152	8	32	64	34	341	167	48	15	24	325	19	172	6	6	4	3,888		
Seventh.....	23	21	6	.....	3	.....	18	3	2	.....	.....	.....	2	.....	2	.....	.....	.....	80
Total.....	4,553	5,323	574	22	286	203	205	1,355	1363	571	187	154	2,889	186	1775	36	77	26	19,785		

Statement of Work Done at Annual Inspection by Inspector No. 3 in 1897.

First.....	1,312	1,440	199	9	71	34	48	328	306	94	63	60	605	38	350	6	16	9	4,988
Second.....	2,170	2,482	327	10	49	39	68	398	307	49	76	60	886	70	428	19	17	21	7,476
Fifth.....	1,056	1,159	92	5	17	30	60	291	117	14	15	19	238	13	78	6	11	3	3,224
Seventh.....	30	38	3	.....	1	1	2	5	1	.....	.....	.....	4	.....	2	.....	.....	1	88
Total.....	4,568	5,119	621	24	138	104	178	1,022	731	157	154	139	1,733	121	858	31	44	34	15,776

Amount of Coal Consumed in Pumping, Gallons of Water Pumped, Average Height Pumped, Cost per Million Gallons, Etc., from First Year Works were Operated to Dec. 31, 1897.

Yr.	Tons Coal Consumed.	Cost Coal from Jan. 1st to Dec. 31st.	Grades of Bituminous Coal.	Gallons of Water Pumped.	Increase or Decrease.	Number of places supplied.	No. of Fire Hydrants.	Average height of Water in Reservoir above sur-face of Bay	Cost Coal per million gallons raised to Reservoir.	Gallons raised to Reservoir by one pound of Coal.
1868.....	591 1	\$ 309 61	Lump.	.....	.....	.....	.....	.....	.....	.....
1869.....	544 4	4,818 48	"	.....	.....	.....	.....	.....	.....	.....
1870.....	1,064 5	5,159 10	"	246,648,960	.....	1,218	97	232 0	\$18 76	98 5
1871.....	1,422 7	7,117 00	"	279,368,495	32,719,535 :	1,727	99	232 0	16 52	150 9
1872.....	1,308 5	6,528 50	"	395,076,000	115,707,505 :	2,140	103	232 0	21 90	114 8
1873.....	1,672 5	8,412 65	"	384,062,415	11,013,585 :	2,475	107	232 0	17 38	126 4
1874.....	1,759 0	7,709 54	"	444,817,395	60,754,980 :	2,663	107	232 0	16 30	145 5
1875.....	1,836 4	8,657 61	"	531,005,475	86,188,080 :	2,700	110	232 0	13 30	159 3
1876.....	1,105 1	8,925 22	"	670,726,650	139,721,175 :	2,763	112	232 0	12 75	135 7
1877.....	2,456 6	8,509 33	"	660,981,810	9,744,840 :	2,854	114	232 0	11 64	136 4
1878.....	2,463 3	7,945 37	"	682,392,315	21,410,505 :	2,915	115	232 0	9 19	153 6
1879.....	2,628 1	7,428 92	"	807,800,400	125,408,085 :	3,011	121	232 0	8 99	126 0
1880.....	3,076 1	6,978 41	Slack.	775,805,250	31,995,150 :	3,568	126	232 0	6 68	142 2
1881.....	3,430 3	6,517 58	"	975,640,934	219,835,684 :	4,110	161	232 0	6 45	139 7
1882.....	2,968 2	5,355 93	"	829,759,260	145,881,674 :	4,687	171	234 0	4 66	170 0
1883.....	2,398 2	3,908 59	"	815,939,685	13,819,575 :	5,077	197	234 7	4 99	152 4
1884.....	3,010 8	4,502 61	"	917,781,350	101,841,665 :	5,395	248	234 3	4 40	159 7
1885.....	3,243 8	4,575 79	"	1,036,496,665	118,715,315 :	5,658	270	232 9	3 86	165 8
1886.....	3,369 0	4,318 64	"	1,117,389,075	80,892,410 :	6,140	280	233 3	2 95	216 0
1887.....	2,820 4	3,589 31	"	1,218,213,688	100,824,613 :	6,368	318	234 1	1 89	292 1
1888.....	2,392 3	2,545 46	"	1,341,708,002	123,494,314 :	6,600	333	234 6	1 80	301 5
1889.....	2,446 0	2,661 12	"	1,475,358,220	133,650,218 :	7,086	346	235 2	1 81	322 4
1890.....	2,583 6	3,052 89	"	1,659,625,551	184,267,331 :	7,728	372	236 9	2 18	291 42
1891.....	3,120 7	3,941 53	"	1,807,038,580	147,413,029 :	8,255	393	237 3	2 35	279 43
1892.....	3,658 0	4,807 11	"	2,047,993,505	240,954,925 :	8,998	415	237 4	2 66	248 6
1893.....	4,693 5	6,218 95	"	2,333,638,610	285,645,105 :	9,687	444	236 5	2 43	306 8
1894.....	2,960 0	4,423 59	"	1,816,596,518	517,042,092 :	10,680	479	236 6	2 21	278 62
1895.....	3,541 5	4,377 16	"	1,975,396,305	158,797,787 :	.....	489	237 2	1 796	328 17
1896.....	3,056 0	3,603 28	"	2 005,757,728	30,361,423 :	10,846	514	237 6	2 034	331 75
1897.....	3,338 2	4,507 52	Miscel's.	2,215,416,770	209,659,042 :	11,385	523	235 9	.....	.....

See pumping statistics for 1897.

PUMPING STATISTICS FOR 1897.

MONTH.	No. 1.		No. 2.		No. 3.		No. 4.		TOTALS.		Daily Average.	Average Lift in Feet.
	Run.	Gallons.	Run.	Gallons.	Run.	Gallons.	Run.	Gallons.	Run.	Gallons.		
January.....
February.....
March.....
April.....
May.....
June.....
July.....
August.....
September.....
October.....
November.....
December.....
Total.....

For a portion of the year the disturbances in the coal fields throughout the country, compelled us to purchase fuel as best we could, at prevailing prices, which makes the cost of pumpage above normal. Now, with our present storage capacity for coal, we hope to be able to guard against similar troubles in the future.

PUMPING STATISTICS.

There are four pumping engines.

Nos. 1 and 2 are Cornish Bull Pumps, erected in 1868; alike in their dimensions, which are as follows: Steam Cylinders 60 inches in diameter, Pump Plunger $20\frac{3}{4}$ inches in diameter, each 10-foot stroke, capacity being 165 gallons per stroke, pumping 2,000,000 gallons daily. One of these pumps is out of commission, the cost for repairs being greater than it is worth.

No. 3 is a Gaskill Horizontal Compound Pumping Engine, erected in 1886, having two H. P. Cylinders 21 inches in diameter, two L. P. Cylinders 42 inches in diameter, two pumps $19\frac{1}{2}$ inches in diameter, all 36-inch stroke; capacity being 182 gallons per revolution, pumping 5,000 000 gallons daily.

No. 4 is a Worthington Horizontal Compound High Duty Pumping Engine, erected in 1893, having two H. P. Cylinders 33 inches in diameter, two L. P. Cylinders 66 inches in diameter, two pumps 29 inches in diameter, all $49\frac{3}{4}$ -inch stroke; capacity being 552 gallons per stroke, pumping 12,000,000 gallons per day, at a piston speed of 128 feet per minute against a head of 260 feet.

There are two intakes, one constructed in 1868, of which 52 feet is brick 14 feet diameter, 590 feet is wood $4\frac{1}{4}$ feet in diameter, and 333 feet is boiler iron 4 feet in diameter, making a total length of 975 feet. The top of the outer end of this intake is four feet below the zero level of the bay, and as it approaches the shore ascends till the top is only two feet above the zero level of the bay. *This intake has not been used since the new one was completed, and as the part made of wood has not been submerged for some time it is undoubtedly past use.* The second intake was completed in 1896. It is made of cast iron 60 inches internal diameter, 8,307.18 feet long, buried in the bottom of the bay; at no place is there less than three feet of earth over its top. The outer end terminates in an octagonal crib, 40 feet being its extreme width and 8 feet high, the top being 13 feet below the zero level of the bay. So far as we know, this is the longest single piece of submerged 60-inch cast iron pipe in the world.

The standpipe was erected in 1868. It is five feet in diameter and 259.65 feet in height. A spiral staircase surrounds it and all enclosed in brick. So far as we know, this is the tallest standpipe in the world.

The boiler house is 74 feet wide, 102 feet long, and 25 feet from floor line to bottom of cords to roof. On the north side eight horizontal tubular boilers are installed in batteries of two each. The boilers are 72 inches in diameter, 18 feet long, without domes, and contain eighty 4-inch lap welded tubes, capable of carrying 150 lbs. pressure to the square inch.

On the south side of the house can be erected an equal number of the same size boilers, but till these are required the room is used for storing coal, the bins now in place hold 800 tons of fuel.

On the north side of the boiler house, near its east end, is a self-sustaining steel plate chimney, 175 feet high, 75 inches internal diameter, lined with fire-brick to a height of 80 feet.

The reservoir is about two miles distance from the pumping station, the bottom of which is 210 feet above the zero level of the water in the bay, and when the water is carried to a depth of 27 feet, holds 32,952,934 gallons of water.

The regular employees at the pumping works are one chief engineer, two assistant engineers, three firemen, two assistant firemen, one watchman and one janitor. The chief engineer stands a watch of five hours, from 7 to 12 every forenoon; the assistants divide the remainder of each day equally between them; each one of the firemen stands a watch of eight hours and each of the assistant firemen a watch of twelve hours. The chief engineer gives daily ten hours service; when not on watch, is employed in repairs, supervision, etc. In addition to standing their regular watch, the assistant engineers aid their superior officer in keeping the machinery in order. The watchman takes care of the grounds and does such other work as may be required of him. The janitor takes care of the buildings.

GASKILL PUMP.

FIRE HYDRANTS PLACED IN 1897.

STREET.	LOCATION.	STYLE.	REMARKS.
Front—Water Works Grounds.	292 ft. East of West Line of Eng. House No. 1.	Ludlow	.....
Twelfth	N. W. Corner Brewster.	Matthews	.....
"	N. E. Corner Wayne.	6-in.	.....
"	N. E. Corner Perry.	6-in.	.....
Seventeenth.	N. W. Corner German.	"	In place of old Matthews taken out
Buffalo Road.	N. E. Corner Pennsylvania Avenue.	"	Pittsb'g taken out, Buf. Rd., N. W. Cor. E. Av.
"	229 ¹ feet East of Brandes.	"	.....
Twenty-first.	N. E. Corner Wayne.	"	In place of Bay State
Twenty-seventh.	193 ¹ feet East of Holland.	"	.....
East Avenue.	366 feet North of Fifteenth.	6-in.	In place of 4'' Matthews
"	27 feet South of North Line of Twelfth.	6 in.	In place of 4'' Matthews
"	N. E. Corner Buffalo Road	"	.....
Ash....	S. E. Corner Third.	"	4'' Matthews taken out, N. E. Cor. Ash & 3d
State....	S. W. Corner Thirteenth.	"	.....
Chestnut.	508 feet South of Twenty-sixth.	"	.....
Walnut....	N. E. Corner Tenth.	1 1/2 Jarecki.	For Cart Sprinkler
Liberty.....	S. E. Corner Twenty-fifth.	Matthews.	.....

SUMMARY OF FIRE HYDRANTS PLACED AND REMOVED IN 1897.

PLACED.	SIZE.	NUMBER.	REMOVED.	SIZE.	NUMBER.
Jarecki, (For Cart Sprinkler.....	1 1/2-in.	..	Matthews.....	4-in.	5
Matthews.....	4 "	11	Pittsburg.....	4 "	1
".....	6 "	4	Bay State.....	4 "	1
Ludlow.....	4 "	1			7
		— 16	Net increase.....		9
			Number in use December 31, 1896.....		514
			Total in use December 31, 1897.....		523

Main Pipe Laid in 1897.

LOCATION.	SIZES.										REMARKS.					
	1-in.		1½-in.		2-in.		4-in.		6-in.			12-in.		20-in.		
	Feet.	In.	Feet.	In.	Feet.	In.	Feet.	In.	Feet.	In.		Feet.	In.	Feet.	In.	
Front St., Water Works Grounds.....																
Second St., bet. Wallace and Ash.....	153				11		628	11								
Third, bet. Sassafras and Chestnut.....																1467
“ across Holland.....																61
Fifth, bet. Reed and Wayne.....										96						
“ bet. East and Penn'a Ave.....										209	4					
“ across Holland.....										52	6					
Seventh, bet. Wayne and Perry.....										104						
“ bet. Reed and Wayne.....										24						
Tenth, bet. Cascade and Raspberry.....										201	4					
Eleventh, bet. Ash and Reed... ..																
“ bet. Reed and Wayne.....										* 9	6					Hydrant Branch.
“ bet. Wayne and Perry.....										* 9						Hydrant Branch.
“ bet. Perry and East Ave.										*10	6					Hydrant Branch.
“ bet. Ash and East Ave.....										* 9						Hydrant Branch.
Twelfth, bet. Perry and East Ave																1321½ ft. 4 in. taken out.
“ bet. Wayne and Perry.....																Hydrant Branch.
“ bet. Wayne and East Ave.....																Hydrant Branch.
“ northwest cor. Brewster.....												1390				Hydrant Branch.
Fourteenth, bet. Reed and Wayne.....																
Centre, bet. East and Penn'a Ave.....	174															
Lake Road, east from East Ave.....																
Sixteenth, bet. Liberty and Plum.....																
Buffalo Road, intersection of East Ave.																36 ft. 4 in. taken out.
“ “ northeast cor. Penn'a Ave.....																Hydrant Branch.
“ “ bet. Brandes and City line.....																Hydrant Branch.
“ “ bet Penn'a Ave and City line.....																

Main Pipe Laid in 1897—Continued.

LOCATION.	SIZES.										REMARKS.				
	1-in.		1½-in.		2-in.		4-in.		6 in.			12-in.		20-in.	
	Feet.	In.	Feet.	In.	Feet.	In.	Feet.	In.	Feet.	In.		Feet.	In.	Feet.	In.
Liberty, southeast cor. 25th.....	*11	6	Hydrant Branch.
Plum, bet. 21st and 22d.....	
“ bet. 23d and 24th.....	50	9	.....	.....	.....
Raspberry, bet. 9th and 10th.....	170	8	.....	.....	.....
Park Ave. South, bet. Poplar and Liberty.....	188	.....	.....	.....	.....
Brewster, bet. 11th and 12th.....	184	.....	.....	.....	.....
Queen, bet. East and Penn'a Ave.....	260	.....	.....	.....	.....
Total.....	788	69	11	133	971	10	9032	2	4850	.....	.....	.....	.....	1528

Summary of Main Pipe Laid and Removed in 1897.

PIPE LAID—		Feet.	Inches.
1 inch.....	.....	788	
1½	.....	69	11
2	.....	133	
4	.....	971	10
6	.....	9,032	2
12	.....	4,850	
20	.....	1,528	
Total.....		17,372 11	
PIPE REMOVED—			
¾-inch.....	.....	68	
1	.....	181	10
4	.....	5,563	1
6	.....	3,034	
Previously reported.....		8,846 11	
Grand total..		Net total, 8,526	
		Or 1 mile 3,246	
		94 miles 2,114 6	
		96 miles 80 6	

CROSSES PLACED IN 1897.

SIZE.	NUMBER.
4 x 4-inch.....	1
6 x 6-inch.....	12
12 x 6-inch.....	4
12 x 12-inch.....	2
20 x 20 x 4 x 4-inch.....	2
20 x 20 x 12 x 6-inch..	1
30 x 20 x 20 x 20-inch..	1— 23

CROSSES REMOVED IN 1897.

4 x 4-inch.....	9
6 x 4-inch.....	6
6 x 6-inch.....	3
20 x 4-inch.....	1— 19
Net increase.....	4

TEES PLACED IN 1897.

SIZE.	NUMBER.
4 x 4-inch.....	4
6 x 4-inch.....	12
6 x 6-inch.....	3
12 x 4-inch.....	1
12 x 6-inch.....	9
12 x 12-inch.....	1
20 x 6-inch.....	1— 31

TEES REMOVED IN 1897.

4 x 4-inch.....	4
6 x 2-inch.....	1
6 x 4-inch.....	10
6 x 6-inch.....	1— 16
Net increase....	15

Stop Valves Placed in 1897.

Street.	Where Located.	Size.	Style.	Remarks.
Front, Water Wks. Grounds	166 ft. E. of W. line Eng. H. No. 1. 4 ft. N. of E. & P. R. R. Track	4	Eddy.	
Front, Water Wks. Grounds	202 ft. E. of W. line Eng. H. No. 1. 2 ft. N. of N. line Boiler H. No. 2.	2	Hays.	
Short.....	East line of Chestnut.....	4	Eddy.	
"	West " "	4	"	
Third	East " French.....	4	"	In place of 4-in. Ludlow.
"	East " Holland.....	4	"	
"	West " "	4	"	
"	East " Sassafras.. ..	20	"	
"	East " Chestnut.....	20	"	{ 4-in. Ludlow taken out 19 ft. W. of E. line Chest.
Fourth.....	West " Holland.....	6	"	
Fifth.....	East " East Ave.....	6	"	
"	East " Holland.....	6	"	
"	18 $\frac{1}{2}$ ft. W. of E line Chest	4	"	
Sixth	East line of Holland.....	6	"	
Seventh... ..	East " Poplar.....	4	"	
Tenth.....	East " Raspberry...	6	"	
Eleventh	15 ft. E. of E. line Ash....	6	"	
"	East line of Reed.....	6	"	
"	West " Wayne.. ..	6	"	
"	East " Wayne.....	6	"	
Twelfth... ..	West " East Ave.....	12	"	
"	East " Reed.....	6	"	
"	East " Wayne.....	12	"	
Fourteenth.....	East " Reed	6	"	
Eighteenth	West " Parade.....	6	"	In place of 6-in. Ludlow.
"	West " Wayne.....	6	"	In place of 6-in. Ludlow.
Buffalo Road...	10 $\frac{1}{2}$ ft. E. of E. line Pa. Av.	6	"	
" "	West line of Brandes.....	6	"	
Twenty-second	West " Cascade.....	6	"	
Twenty-fourth..	East " Peach.....	6	"	
"	West " Peach.....	6	"	
"	East " Myrtle	6	"	
Twenty-fifth....	East " Myrtle.....	6	"	
"	West " Myrtle.....	6	"	
"	West " Reed.....	6	"	
"	East " Reed.....	6	"	
Brewster	North " Twelfth	6	"	
East Avenue....	South " Buffalo Road	12	"	In place of 6-in.
"	North " Buffalo Road	12	"	In place of 6-in.
"	North " Fifteenth.....	12	"	In place 6-in. 72 ft. N. 15.
"	South " Twelfth (E.)	12	"	In place of 6-in.
"	616 $\frac{1}{2}$ ft. S. of S. line 12th..	...		4-in. Eddy taken out.
Parade	27 $\frac{1}{2}$ ft. N. of N. line 17th..	1 $\frac{1}{2}$	Hays.	
"	North line of Second.....	1	Hays.	
German	South " Second	4	Eddy.	In place of 4-in. Ludlow.
Holland.....	South " Fourth	6	"	In place of 4-in. Eddy.
"	North " Seventh	6	"	In place of 4-in. Eddy.
"	North " Third	12	"	{ 4-in. Eddy taken out N. line of 4th.

Stop Valves Placed in 1897—Continued.

Street.	Where Located,	Size.	Style.	Remarks.
Holland.....	South line of Third.....	6	Eddy.	{ 4-in. Eddy taken out S. line of 6th.
French.....	{ 143 ft. N. of S. line E. Park, } { 73 ⁶ / ₁₂ ft. W. of E. line French }	6	"	
State.....	North line of Hill Road..	6	"	
Sassafras.....	North " Third.....	4	"	
"	South " Third	4	"	
"	68 ft. S. of S. line 14th....	4	"	
"	69 ft. S. of S. line 14th....	2	Hays.	
Myrtle.....	North line of Third.....	4	Eddy.	
"	South line of Third.....	4	"	
Chestnut	82 ft. of s. l. 12th. 18 ft. w. of s. l. Chest.	4	"	
	79 ft. of s. l. 12th. 28 ft. w. of s. l. Chest.	4	"	
Walnut.....	11 ft. N. of N. line 10th...	1 ¹ / ₂	Hays.	
Poplar.....	North line of Seventh....	6	Eddy.	
Park Ave. South	West " Poplar	6	"	
Lake Road.....	East " East Ave...	6	"	

Summary of Stop Valves, Placed and Removed in 1897.

PLACED—	SIZE.	NUMBER.
Hays.....	1 inch	1
"	1 ¹ / ₂ inch	2
"	2 inch	2
Eddy.....	4 inch	16
"	6 inch	32
"	12 inch	7
"	20 inch	2
Total.....		62
REMOVED—		
Ludlow.....	4-inch	3
"	6-inch	2
Eddy	4-inch	5
"	6-inch	4
Total.....		14
Net increase.....		48

CONNECTIONS MADE IN 1897.

Size	NUMBER.
$\frac{3}{4}$ inch.....	393
1 ".....	5
$1\frac{1}{8}$ ".....	3
2 ".....	4
4 ".....	3
6 ".....	1
Total.....	409

Ft. of service pipe used, 7,783.

Removed or abandoned.	
$\frac{3}{4}$ inch.....	31
1 ".....	1
$1\frac{1}{8}$ ".....	1
2 ".....	1
4 ".....	2
Total.....	36

Feet of service pipe less, 1,067.

Net Increase..... 373

Ft., 6,716

Previously reported to December 31, 1896.....	Or 1 Mile, "	1,436
	39 Miles, "	1,857
	40 " "	3,293

N. B. In addition 97 connections were renewed, etc., on streets to be paved, and others which had given out, in the following wards:

First Ward,	$\frac{3}{4}$ inch.....	41
Second "	$\frac{3}{4}$ ".....	26
Fourth "	$\frac{3}{4}$ ".....	17
Sixth "	$\frac{3}{4}$ ".....	13-97

Statement of Connections made to December 31, 1897.

IN STREETS THAT WERE TO BE PAVED AND HAVE NOT BEEN USED.													IN USE.						TOTAL						
WARD.	SIZE IN INCHES.					TOTAL.	SIZE IN INCHES.						TOTAL.	SIZE IN INCHES.						TOTAL.					
	3/4	1	1 1/2	4	3/4		1	1 1/4	1 1/2	2	2 1/2	3		4	6	3/4	1	1 1/4	1 1/2		2	2 1/2	3	4	6
First	107	.....	.....	.....	107	1,301	20	.....	10	11	.....	.....	15	.....	1,357	1,408	20	.....	10	11	.....	.....	15	.....	1,464
Second.....	249	1	1	1	252	2,010	15	.....	26	17	.....	.....	39	7	2,114	2,259	16	.....	27	17	.....	.....	40	7	2,366
Third.....	395	1	.....	.....	396	1,806	32	.....	22	22	1	.....	24	4	1,911	2,201	33	.....	22	22	1	.....	24	4	2,307
Fourth.....	221	1	.....	.....	222	1,499	27	3	17	23	.....	.....	13	.....	1,582	1,720	28	3	17	23	.....	.....	13	.....	1,804
Fifth.....	56	.....	.....	.....	56	1,065	11	1	10	7	.....	.....	4	.....	1,098	1,121	11	1	10	7	.....	.....	4	.....	1,154
Sixth.....	73	2	.....	4	79	1,213	17	.....	9	7	.....	1	4	.....	1,251	1,286	19	.....	9	7	.....	1	8	.....	1,330
Seventh.. . . .	.....	.....	.....	.....	.....	43	4	1	6	3	.....	1	3	1	62	43	4	1	6	3	.....	1	3	1	62
Total.....	1,101	5	1	5	1,112	8,937	126	5	100	90	1	2	102	12	9,375	10038	131	5	101	90	1	2	107	12	10,487

Total Number reported in 1896..... 10,124
Total number made in 1897..... 409

LESS
Number abandoned, but not reported, in 1896..... 14
From which deduct omissions in 1896..... 4 10
To which add number abandoned in 1897..... 36 46

Total number connections December 31, 1897,

10,487

WORTHINGTON PUMP.

OFFICERS AND SALARIES PAID THEM IN 1897.

<i>Commissioners</i> —Wm. Hardwick.....	\$ 900 00
T. W. Shacklett.....	900 00
Clark Olds.....	900 00
<i>Secretary and Treasurer</i> —Wm. Himrod	2,000 00
<i>Assistant Secretary</i> —Geo. C. Gensheimer.....	1,440 00
<i>Book-Keepers</i> —John Kolb.....	1,080 00
R. H. Bear.....	960 00
W. W. Todd.....	840 00
<i>Clerk</i> —M. L. Whitley.....	660 00
<i>Inspectors</i> —John D. Spafford.....	840 00
Wm. McCleery.....	780 00
P. F. Weinheimer.....	780 00
<i>Meter Taker</i> —Perry E. Thurber.....	780 00
<i>Superintendent of Street Work</i> —R. T. Walker.....	1,320 00
<i>Foreman of Street Work</i> —Fred Simons, per day.....	2 75
Fred D. Gross, per day	2 75
<i>Chief Engineer</i> —F. A. Roth.....	1,320 00
<i>Assistant Engineers</i> —Geo. R. Miller.....	960 00
Henry F. Voltz	130 00
<i>Firemen</i> —Joseph Burns.....	660 00
Jacob Mullen.....	660 00
Nelson Jamison.....	110 00
<i>Assistant Firemen</i> —R. W. Simons.....	400 00
O. W. Roth.....	100 00
<i>Watchman at Pumping Station</i> —Michael Flynn..	660 00
<i>Janitor at Pumping Station</i> —Nathan Block.....	600 00
<i>Keeper of Reservoir</i> —Samuel Phister	480 00
<i>Janitress</i> —Mrs. Matilda Sager..	168 00

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Boiler House—Old.....	11	Kessler, C.....	
Brewster, Wm.....	15	Olds, Clark.....	
Brown, Conrad J.....	14, 15, 20	Shacklett, Turner W.....	
Bryant, J. M.....	14	Sherwin, G. W. F.....	
Burns, Joseph.....	87	Sloan, B. F.....	
Cash—Monthly Exhibit.....	17	Starr, Geo. W.....	
Received to Dec. 31, 1897....	21	Whitman, Benjamin... ..	
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City of Erie—Account.....	61	Additional.....	
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Collections.....	9	Gaskill.....	10, 74, 75
Commissioners.....	3, 14	Worthington.....	74, 75
Meetings of.....	3	Rates for City Water.....	66, 67
Office hours.....	3	Rawle, Henry.....	
Connections made in 1897.....	84	Reed, Wm. W.....	14
Total to Dec. 31, 1897.....	85	Reservoir	8
Cornish Bull Pump.....	72, 74, 75	Resources and Liabilites.....	
Crosses.....	81	Roth, F. A.....	3
Disbursements.....	52-57	Roth, O. W.....	
Fire Hydrants.....	77	Sager, Mrs. Matilda.....	
Flynn, Michael.....	87	Salaries, 1897.....	
Gaskill Pump.....	74, 75, 76	Scott, Wm. L.....	
Gensheimer, Geo. C.....	3, 15, 44, 87	Selden, John C.....	
Gensheimer, John.....	14	Self Sust'ing Steel Plate Chimney	
Gross, Fred D.....	87	2, 7, 60
Hardwick, William... ..	3, 14, 15, 24, 87	Shacklett, T. W.....	3, 14, 15, 28
Health Officer.....	8, 13	Sherwin, G. W. F.....	4, 14
Himrod, William.....	3, 15, 40, 87	Simons, Fred.....	
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Gaskill Pump.....	76	Sloan, B. F.....	15
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Stand Pipe	2, 60	Stop Valves.....	82
Worthington Pump	86	Tees.....	
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Jamison, Nelson	87	Typhoid Fever.....	8
Kessler, C.....	14, 18	Walker, R. T.....	3
Kolb, John.....	87	Warrants Issued in 1897.....	22
Liebel, Michael	14, 15	Water Pumped.....	73
Mains.....	78, 79, 80	Weinheimer, P. F.....	
Mason, Dr. W. P.....	8	Whitley, M. L.....	
McCleary, Wm.....	87	Whitman, Benjamin.....	12, 14
Meters.....	60	Worthington Pump.....	74, 75
Mill Creek.....	9-13	Work Shop	
Miller, Geo. R.....	87	Wright, J. W., M. D.....	
Mullen, Jacob	87	Voltz, Henry F.....	
Officers 1897.....	3, 87		

THIRTY-SECOND
ANNUAL REPORT
OF THE
COMMISSIONERS
OF
WATER WORKS,
IN THE
CITY OF ERIE,
TO THE
COUNCILS,
FOR THE
YEAR ENDING DECEMBER 31, 1898.

ERIE, PA :
HERALD PRINT. & PUB. CO.,
1899.

PUMPING STATION AS SEEN FROM THE HAY.

Commissioners of Water Works,

In the City of Erie,

Erie, Penn'a,

WILLIAM HARDWICK,
T. W. SHACKLETT,
CLARK OLDS.

Officers.

T. W. SHACKLETT,
President,

WILLIAM HIMROD,
Secretary and Treasurer.

GEO. C. GENSHEIMER,
Assistant Secretary.

F. A. ROTH,
Chief Engineer at Pumping Station.

R. T. WALKER,
Superintendent of Street Work.

OFFICE—City Hall.

OFFICE HOURS—From 8:00 A. M. to 5:00 P. M.; on Mondays to 9:00 P. M.

REGULAR MEETINGS OF THE COMMISSIONERS—Every Saturday at 3:00 P. M., and the first of each month at 11:00 A. M., except when it occurs on Sunday, then they meet the following day. Special meetings when necessary.

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ANNUAL REPORT.

To the Councils of the City of Erie, Pa. :

GENTLEMEN :—

We herewith submit the thirty-second annual report of this department :

RECEIPTS :

Balance in City Treasury Dec. 31, 1897.....	\$	437	18
From Water Rents :			
Assessments... ..	\$100,894	25	
Meters	29,696	97	
Building Permits.....	570	33	
Special Permits.....	141	93	131,303 48
From other sources.....		1,251	77
<hr/>			
Total.....	\$	132,992	43

DISBURSEMENTS :

Construction.....	\$	62,017	20
Maintenance.....		15,799	92
Operating		21,065	34
Accounting.....		8,465	51
Legal.....		600	00
Sundries		6	92
Sinking Fund Commissioners.....		25,000	00
Balance in City Treasury Dec. 31, 1898.....		37	54
<hr/>			
Total.....	\$	132,992	43

Our accounts have not been audited for the years 1897 and 1898, and at the very outset of this report we desire to reiterate our request that this important duty be performed, at least, once annually.

The increase in water receipts over the previous year was \$7,196.87.

The amount of water pumped was 2,270,520,528 gallons,—an increase over the year 1897 of 55,103,758 gallons.

This is a daily per capita of nearly 108 gallons for each man, woman and child in the city, basing our population upon 55,000 inhabitants, and goes to show that more water is wilfully wasted than is legitimately consumed.

The English cities use on an average 28 to 40 gallons per capita daily, for each and every inhabitant, while in the city of Fall River, Mass., (where meters are used for domestic as well as commercial and manufacturing purposes) the consumption is less than 34 gallons.

Allowing, therefore, the very liberal quantity of 50 gallons, daily, per capita. it will be seen that we waste fully as much as is required for legitimate use.

We laid in the year 1898 nearly five miles of pipe, making the present total length of our mains about 101 miles.

Included in the pipe placed was the extension of the 12-inch main on Twelfth street, from Wayne street (to which point it was brought last year from Twenty-first street via East avenue), to Parade street, thence northwardly as far as Fifth street, connecting at Seventh street with a pipe of same size already in that thoroughfare, thus making a complete belt of 12-inch main from Seventh and Chestnut streets (where junction is made with the 20 and 30-inch force mains), extending to East avenue via the route already described, thence southwardly to Twenty-first street where it joins a 12-inch pipe, which in turn extends to the large mains in Chestnut street; thereby affording an improved circulation in more than one-half of the city and at the same time providing a very much better fire protection for the eastern portion of our municipality. We also made a net gain of 328 connections, making the total number 10,815, which are used by about 9,000 water consumers.

The Commissioners have had under consideration for several years the question of lower water rates, although we very frankly say we do not share in the opinion held by some of our citizens

that the present schedule is exorbitant. We have on file in our office a carefully tabulated statement of the rates prevailing in 136 cities of the United States, in 117 of which the charges are higher than in Erie on the average household fixtures. A list of a number of these cities taken from said tabulated statement will be found on pages 82-83 of this report.

It is quite true that several large cities have, ostensibly, within recent years, very materially reduced their water rates. It is also true that some of these cities, notably Buffalo and Detroit, receive large appropriations from the Councils to help them out in the matter of cheap rates; but even this plan has not been entirely successful, and has resulted in producing a deficit, as is evidenced from the last message of Mayor Diehl of Buffalo, wherein he calls special attention to the Water Department, alleging that the expenditures had exceeded the receipts by \$234,531.39, which he affirms was to be attributed very largely, if not entirely, to the decreased receipts caused by lowering the rates, and adding still further that there was already a deficiency in the department due the Controller of over \$500,000.

The truth is, water cannot be furnished anywhere at a sum less than its cost and produce any other result.

The subject of abnormally low water rates was most fully set forth and ably argued against in a paper read by F. A. W. Davis, Vice President Indianapolis Water Co., at the last meeting of the American Water Works Association, held in Buffalo, which was subsequently published in *Fire and Water*, and in *City Government*, and from them copied by several of the Erie papers.

The Commissioners, earnestly endeavoring to promote the best interests of the city, have been actively and industriously engaged for the past seven years in the prosecution of such work as in their judgment would be of lasting benefit to the community, beginning, as has already been stated in former annual reports, with the erection of an engine room in which was placed the large 12,000,000-gallon Worthington High Duty Pump.

This was quickly followed by the extension of the intake pipe to a point in the bay where the waters are least contaminated,—the happy effect of which is seen in the report of the Health

Officer, which gives the number of typhoid fever deaths in 1898 as 7, whereas in the years 1891 and 1892,—which was prior to the laying of the new intake—the deaths from this cause were 24 in each year.

Later on, we undertook the construction of a new boiler house (to be used also for the storage of coal), and its equipment with boilers to supplant those worn out by long service; and during the past year we have converted the old boiler house into an electric light room, and a dynamo and engine have been installed therein, which furnish arc and incandescent lights for the buildings and grounds, the smaller and original dynamo and engine being used only on the incandescent system whenever a smaller number of lights is required.

Our chief work of the year has been on the proposed High Service system for South Erie, and the 24-inch main required for the same has been laid from the Pumping Station up Walnut Street as far as Nineteenth, and westwardly to Cherry.

It is intended to extend this main to a special standpipe near the Reservoir, to be erected on a plot of ground which has been secured during the past year for that purpose, and to have the system in complete working order before the close of the year 1899.

Pending the completion of the work, as originally laid out, the new service will be put into operation, temporarily, by a series of check and relief valves by means of which that portion of the city south of Nineteenth street will be placed in the High Service section. We have felt that the needs of our fellow citizens in South Erie were worthy of consideration and have deemed it our bounden duty to supply them with a more effective service, inasmuch as they pay the same rates as do their downtown neighbors.

The call of a committee, headed by Ex-Water Commissioner M. Liebel and John S. Rilling, Esq., from the new St. Vincent's Hospital, (which institution would be practically inoperative without a more effective water pressure), together with memorials and visits from South Erie residents, all pleading for better service, induced us to take prompt action towards relieving them.

As a part of the new system, and at the same time to add to our general pumping facilities, it was necessary to make arrangements for another pumping engine, and after receiving bids, the contract

was awarded the Henry R. Worthington Company for an 8,000,000-gallon pump, which is now being erected in the "Gaskill" engine room, in the space provided for that purpose by our predecessors many years ago.

In view of what has been done and of what we are now doing, it must be remembered that funds are necessary to carry on a work of such proportions, and inasmuch as we have neither asked for nor expected an appropriation from Councils to help us out, (but on the contrary have paid into the hands of the Sinking Fund Commissioners, within the past two years, the sum of \$40,000.00) we have faith to believe that the fair minded citizens of Erie will patiently wait until such time as these pressing needs and important improvements have been completed before expecting any very great reduction in their water rates; especially as we have shown by comparison, and of which we, ourselves, are thoroughly convinced, that the present schedule will compare favorably with a large majority of the cities in the country.

The report of the Water Works of Cambridge, Mass., a city of 87,000 inhabitants, (where rates are even higher than in Erie), in pleading that their present charges be maintained until certain improvements were completed, says "There is nothing in the domestic expenses of our citizens where they receive so much for so little as in the water they use."

We are in hopes, however, that the year 1900 will see the bulk of our improvements completed and paid for, when it will be our great pleasure to recommend to your honorable bodies a new schedule showing a material reduction in rates for all purposes,—and allowing householders the privilege of a meter, if they so elect; in the meantime, we propose to formulate a revised and modified meter rate, to be put in operation July 1, 1899.

We confidently believe this will meet with your approval, and in this connection we should be pleased to have you act favorably upon our communication to your honorable bodies, dated September 24, 1898, asking that we be allowed to extend the one-third rate now being granted to all charitable institutions (which were enumerated in said communication) to all churches, parsonages, parish houses and to all schools, whether public, private or parochial.

The question of the disposition of the surplus revenues of the department, after the extraordinary expenses herein referred to shall have been made, very naturally comes up for consideration.

It is a well-known fact that the law governing cities of our class, provides that any such surplus can only be used towards liquidating the debts of the Water Works, and cannot, as some suppose, be diverted to any other purpose, or appropriated for any street or municipal improvement whatsoever.

As the Water Works affords protection to all property in the city, so that even the smallest tax-payer is benefitted by reason of having his home or place of employment protected from fire, whether he, himself, is a water-taker or not, it seems reasonable that not the water consumers only, but the tax-payers generally, should contribute towards the payment of the interest upon the Water Works debt; and in like manner the rapid reduction of said debt is also objected to by many upon the ground that we have no right to make the people of the present generation bear all the burden and expense entailed in the construction of the Water Works, but, as posterity will reap the blessings and benefits of the system, it should be left for them also to pay their due proportion towards the liquidation of such indebtedness.

It may be stated, therefore, that the policy which this Board has outlined as one, in their judgment, worthy to be followed, (after the works referred to shall have been completed and paid for,) is to reduce all rates for domestic and other purposes, and to pay into the Sinking Fund not less than \$25,000 annually, which sum of itself, would in less than twenty years wipe out that portion of the debt of the city, incurred in building the Water Works.

It should not be forgotten that in the meantime, this department is furnishing free water for all city purposes; has erected and is maintaining at its own expense more than five hundred fire hydrants; is placing new ones whenever and wherever necessary; (while in Detroit the Fire Department with funds appropriated from general tax levy, buys, erects and maintains all such public fire hydrants;) that we are supplying public fountains, drinking troughs, etc., all of which if charged for at anything like the rates asked by private corporations for such service, would amount to over \$30,000.00 annually, a sum more than equivalent to the

interest on the water works debt ; and it should be remembered also, that this department has never required payment from our citizens of a single dollar for the laying of mains in the streets or for connections from the main to curb, which service is charged for in Detroit and many other cities just the same as the laying of sewers and the making of sewer connections.

Unless the chemical and bacteriological analysis of the water, which is still being made at stated intervals, should show an alarming deterioration in its quality and render necessary the construction of the much-talked-of intercepting sewer, which this department has always favored, or in its stead the invention of some better device for preventing the polluting sewerage from emptying into the bay, or perhaps the establishment of a plant for the still more expensive purification of the water by means of filtration, it is quite safe to say that the Erie Water Works at the close of the year 1899, will be in such condition as to require no extraordinary expenditures for the next fifteen or twenty years.

Respectfully submitted,

T. W. SHACKLETT,

WM. HARDWICK,

CLARK OLDS,

Commissioners.

***Commissioners of Water Works, in the City of Erie, from
Organization to December 31, 1898.***

The COMMISSIONERS OF WATER WORKS, IN THE CITY OF ERIE, are appointed by the Court of Common Pleas of Erie County, Penna., for a term of three years, one member being named annually, in May.

1867	*W. L. Scott,	Henry Rawle,	Wm. W. Reed.
1868	*John C. Selden,	Henry Rawle,	Wm. W. Reed.
1869	*John C. Selden,	Henry Rawle,	Wm. W. Reed.
1870	*John C. Selden,	Henry Rawle,	Wm. W. Reed.
1871	*† John C. Selden,	Henry Rawle,	Wm. W. Reed.
1872	Matthew R. Barr,	John Gensheimer,	Wm. W. Reed.
1873	Matthew R. Barr,	John Gensheimer,	Wm. W. Reed.
1874	Matthew R. Barr,	John Gensheimer,	Wm. W. Reed.
1875	Matthew R. Barr,	John Gensheimer,	Wm. W. Reed.
1876	Matthew R. Barr,	John Gensheimer,	Wm. W. Reed.
1877	Michael Liebel,	John Gensheimer,	Wm. W. Reed.
1878	Michael Liebel,	*J. M. Bryant,	Wm. W. Reed.
1879	Michael Liebel,	*J. M. Bryant,	*G. W. F. Sherwin.
1880	Michael Liebel,	*J. M. Bryant,	*G. W. F. Sherwin.
1881	Michael Liebel,	Benjamin Whitman,	*G. W. F. Sherwin.
1882	Michael Liebel,	Benjamin Whitman,	*G. W. F. Sherwin.
1883	Michael Liebel,	Benjamin Whitman,	*G. W. F. Sherwin.
1884	Michael Liebel,	Benjamin Whitman,	*G. W. F. Sherwin.
1885	Michael Liebel,	Benjamin Whitman,	Geo. W. Starr.
1886	C. Kessler,	Benjamin Whitman,	Geo. W. Starr.
1887	C. Kessler,	C. J. Brown,	Geo. W. Starr.
1888	C. Kessler,	C. J. Brown,	Geo. W. Starr.
1889	C. Kessler,	C. J. Brown,	Geo. W. Starr.
1890	C. Kessler,	C. J. Brown,	Geo. W. Starr.
1891	C. Kessler,	C. J. Brown,	Wm. Hardwick.
1892	T. W. Shacklett,	C. J. Brown,	Wm. Hardwick.
1893	T. W. Shacklett,	C. J. Brown,	Wm. Hardwick.
1894	T. W. Shacklett,	C. J. Brown,	Wm. Hardwick.
1895	T. W. Shacklett,	† C. J. Brown,	Wm. Hardwick.
1896	T. W. Shacklett,	Clark Olds,	Wm. Hardwick.
1897	T. W. Shacklett,	Clark Olds,	Wm. Hardwick.
1898	T. W. Shacklett,	Clark Olds,	Wm. Hardwick.

* Dead.

† Mr. Selden resigned before the expiration of his second term; Mr. Barr was substituted by the other Commissioners, and afterward appointed by the Court.

‡ C. J. Brown resigned December 28, 1895, having been elected Treasurer of Erie County, Penna. Clark Olds was chosen by the other Commissioners, for the unexpired term, on recommendation of the Court, January 2, 1896.

Officers of Water Works, from Organization to Dec. 31, 1898.

	President.	Secretary & Treasurer.	Assistant Secretary.
1867	Wm. W. Reed,	*Wm. Brewster,	.....
1868	Wm. W. Reed,	*Wm. Brewster,	.....
1869	Wm. W. Reed,	*J. C. Perkins,	.....
1870	Wm. W. Reed,	*J. C. Perkins,	.....
1871	Wm. W. Reed,	*J. C. Perkins,	.....
1872	Wm. W. Reed,	*J. C. Perkins,	.....
1873	Wm. W. Reed,	*J. C. Perkins,	.....
1874	Wm. W. Reed,	*J. C. Perkins,	.....
1875	Wm. W. Reed,	*J. C. Perkins,	.....
1876	Wm. W. Reed,	*J. C. Perkins,	.....
1877	Wm. W. Reed,	*J. C. Perkins,	.....
1878	Wm. W. Reed,	*J. C. Perkins,	.....
1879	Michael Liebel,	B. F. Sloan,	.....
1880	Michael Liebel,	B. F. Sloan,	.....
1881	*G. W. F. Sherwin,	B. F. Sloan,	.....
1882	*G. W. F. Sherwin,	B. F. Sloan,	.....
1883	*G. W. F. Sherwin,	B. F. Sloan,	.....
1884	Benjamin Whitman,	B. F. Sloan,	Geo. C. Gensheimer.
1885	Benjamin Whitman,	B. F. Sloan,	Geo. C. Gensheimer.
1886	Benjamin Whitman,	B. F. Sloan,	Geo. C. Gensheimer.
1887	Geo. W. Starr,	B. F. Sloan,	Geo. C. Gensheimer.
1888	Geo. W. Starr,	B. F. Sloan,	Geo. C. Gensheimer.
1889	Geo. W. Starr,	B. F. Sloan,	Geo. C. Gensheimer.
1890	Geo. W. Starr,	B. F. Sloan,	Geo. C. Gensheimer.
1891	C. J. Brown,	Wm. Himrod,	Geo. C. Gensheimer.
1892	C. J. Brown,	Wm. Himrod,	Geo. C. Gensheimer.
1893	C. J. Brown,	Wm. Himrod,	Geo. C. Gensheimer.
1894	Wm. Hardwick,	Wm. Himrod,	Geo. C. Gensheimer.
1895	Wm. Hardwick,	Wm. Himrod,	Geo. C. Gensheimer.
1896	T. W. Shacklett,	Wm. Himrod,	Geo. C. Gensheimer.
1897	T. W. Shacklett,	Wm. Himrod,	Geo. C. Gensheimer.
1898	T. W. Shacklett,	Wm. Himrod,	Geo. C. Gensheimer.

* Dead.

NOTE.—Mr. Brewster was elected June 14, 1867; resigned October 26, 1868, to take effect November 2, 1868; served 1 year, 4 months and 18 days. Mr. Perkins was elected October 26, 1868, to take effect November 2, 1868; resigned March 30, 1878; same accepted December 21, 1878, to take effect January 1, 1879; served 10 years, 1 month and 29 days. Mr. Sloan was elected December 21, 1878, to take effect January 1, 1879; continued in office to June 1, 1891; served 12 years and 5 months. Mr. Himrod was appointed Secretary May 23, 1891, to take effect June 1, 1891. Mr. Gensheimer was appointed Assistant Secretary January 26, 1884.

**Monthly Receipts from all Sources during the Year Ending
December 31, 1898.**

Month.	Assessment.	Meter.	Special.	Plumbing.	Building.	Total.
January.....	\$ 22,760 32	\$ 7,303 09	\$ 6 23	\$ 18 33	\$ 29 38	\$30,117 35
February.....	1,992 94	169 33	3 75	436 83	32 04	2,634 89
March.....	185 39	360 02	11 25	4 70	33 43	594 79
April.....	22,641 82	6,631 19	6 48	39 94	77 13	29,396 56
May.....	2,057 93	201 75	22 80	.....	63 77	2,346 25
June.....	573 91	312 84	14 95	168 47	95 98	1,166 15
July.....	23,195 25	6,682 16	31 00	5 82	38 68	29,952 91
August.....	2,040 20	85 26	18 67	7 58	60 16	2,211 87
September...	176 26	55 45	10 25	20 09	35 96	298 01
October.....	23,230 75	7,764 63	8 64	5 96	33 94	31,043 92
November....	1,968 13	106 47	5 83	3 44	50 48	2,134 35
December ...	71 35	24 78	2 08	540 61	19 38	658 20
Total	\$100,894 25	\$29,696 97	\$141 93	\$1,251 77	\$570 33	\$132,555 25

**Receipts from each Ward during the Year Ending December
31, 1898.**

Ward.	Assessment.	Meter.	Special.	Plumbing.	Building.	Total.
First.....	\$ 13,771 73	\$ 3,657 34	\$ 22 50	\$ 9 33	\$113 74	\$17,574 64
Second.....	22,177 32	13,788 02	25 50	410 96	73 53	36,475 33
Third	24,442 91	4,803 36	24 90	323 03	134 05	29,728 25
Fourth.....	19,014 32	1,403 13	12 31	481 96	144 08	21,055 80
Fifth.....	9,445 77	4,490 11	40 47	20 09	41 02	14,037 46
Sixth	11,359 26	1,171 70	6 25	2 13	61 42	12,600 76
Seventh *....	682 94	383 31	10 00	4 27	2 49	1,083 01
Total.....	\$100,894 25	\$29,696 97	\$141 93	\$1,251 77	\$570 33	\$132,555 25

* Are accounts outside of the City Limits.

**Cash Account of Secretary and Treasurer of Commissioners
of Water Works, in the City of Erie, for the Year Ending
December 31, 1898.**

Month.	Receipts,	Deposited with Treasurer City of Erie.	Balance in Office at Close of Busi- ness each month.
January.....	\$ 30,117 35	\$ 24,606 58	\$ 5,510 77
February	2,634 89	7,362 35	783 31
March.....	594 79	869 15	508 95
April.....	29,396 56	23,555 43	6,350 08
May.....	2,346 25	7,866 50	829 83
June.....	1,166 15	1,043 68	952 30
July ..	29,952 91	24,366 84	6,538 37
August	2,211 87	8,017 85	732 39
September.....	298 01	326 60	703 80
October...	31,043 92	25,612 36	6,135 36
November.....	2,134 35	8,009 91	259 80
December.....	658 20	918 00	.....
Total.....	\$132,555 25	\$132,555 25	.....

**Statement of Account with Treasurer of the City of Erie, for
the Year Ending December 31, 1898.**

Month.	Received from Sec'y & Treas. Commissioners of Water Works, in the City of Erie.	Paid on Warrants of Commissioners of Water Works, in the City of Erie	Monthly Balances.
Balance from 1897.....	\$ 437 18	.....	.....
January.....	24,606 58	\$ 13,342 21	\$ 11,701 55
February.....	7,362 35	15,063 75	4,000 15
March.....	869 15	2,604 02	2,265 28
April.....	23,555 43	9,344 76	16,475 95
May.....	7,866 50	4,966 27	19,376 18
June.....	1,043 68	12,255 42	8,164 44
July.....	24,366 84	18,363 20	14,168 08
August	8,017 85	9,889 89	12,296 04
September.....	326 60	11,328 36	1,294 28
October.....	25,612 36	9,828 57	17,078 07
November.....	8,009 91	2,254 86	22,833 12
December.....	918 00	23,713 58	37 54
Total.....	\$132,992 43	\$132,954 89	\$ 37 54

**Amount Collected annually for Water Furnished, showing
Total Collections, also the Increase and Decrease
each Year since the Commencement
of the Water Works.**

Year Ending Dec. 31st.	RECEIVED.		ANNUAL.	
	Annually.	Totals.	Increase.	Decrease.
1869.....	\$ 4,264 47	.....	.....	.....
1870.....	9,237 30	\$ 13,501 77	\$ 4,972 83	.....
1871.....	18,138 08	31,639 85	8,900 78	.....
1872.....	21,652 68	53,292 53	3,514 60	.....
1873.....	25,560 40	78,852 93	3,907 72	.....
1874.....	27,938 90	106,791 83	2,378 50	.....
1875.....	29,639 38	136,431 21	1,700 48	.....
1876.....	31,048 76	167,479 97	1,409 38	.....
1877.....	32,276 57	199,756 54	1,227 81	.....
1878.....	29,636 01	229,392 55	.....	\$2,640 56
1879.....	33,343 20	262,735 75	3,707 19	.....
1880.....	37,385 00	300,120 75	4,041 80	.....
1881.....	40,385 87	340,506 62	3,000 87	.....
1882.....	43,818 73	384,325 35	3,432 86	.....
1883.....	48,269 89	432,595 24	4,451 16	.....
1884.....	51,852 78	484,448 02	3,582 89	.....
1885.....	53,550 35	537,998 37	1,697 57	.....
1886.....	58,725 00	596,723 37	5,174 65	.....
1887.....	67,121 92	663,845 29	8,396 92	.....
1888.....	73,197 03	737,042 32	6,075 11	.....
1889.....	81,110 68	818,153 00	7,913 65	.....
1890.....	87,279 96	905,432 96	6,169 28	.....
1891.....	93,891 55	999,324 51	6,611 59	.....
1892.....	105,527 03	1,104,851 54	11,635 48	.....
1893.....	111,247 43	1,216,098 97	5,720 40	.....
1894.....	111,821 94	1,327,920 91	574 51*
1895.....	116,927 63	1,444,848 54	5,105 69	.....
1896.....	121,442 94	1,566,291 48	4,515 31	.....
1897.....	124,106 61	1,690,398 09	2,663 67	.....
1898..	131,303 48	1,821,701 57	7,196 87	.....

* Meter rates for water changed from a sliding scale of 6 cents to 10 cents per 1,000 gallons, according to amount consumed, to a flat rate of 6 cents per 1,000 gallons, causing a reduction in receipts of \$5,000.00.

STATEMENT OF WARRANTS ISSUED IN 1898.

JANUARY.

TO PAY VOUCHER.

<i>Date.</i>	<i>No.</i>	<i>Of For</i>	<i>Amount.</i>
4	8859	Jos. Sweeney, Coke.....	\$ 15 30
	8860	Globe Iron Foundry Co., Castings.....	273 92
	8861	Joseph Dudenhoefer, Brick.....	345 60
8	8862	Wm. F. Nick & Son, Brushes.....	1 30
	8863	The Dispatch Publishing Company, One Year's Subscription.....	6 00
	8864	Standard Brick Works, Brick.....	6 25
	8865	Geo. C. Gensheimer, Ass't Secy., Sundries.....	6 83
	8866	Erie Mfg. & Supply Co., Valves and Discs.....	13 95
	8867	Herald Printing & Publishing Co., Books and Stationery.....	18 50
	8868	E. J. Riblet, Shop Rent... ..	20 00
	8869	The Taunton Locomotive Mfg. Co., Expansion Joint.....	80 00
	8870	Pay Roll, Street Work, Disbursed by M. L. Whitley, Clerk	260 15
	8871	Shiffler Bridge Company, Lower Chords and Plates.....	30 38
	8872	Stockdale Coal Co., Coal.....	34 09
15	8873	Geo. C. Gensheimer, Ass't Secy., Sundries.....	38 85
	8874	Pennsylvania Company, Freight.....	44 69
	8875	Packard & Boynton, Coal.....	58 67
	8876	F. A. Mizener, Coal.....	109 98
	8877	National Lead Company, Lead Pipe.....	213 98
	8878	Pay Roll, Street Work, Disbursed by M. L. Whitley, Clerk.....	265 74
	8879	Youghiogheny River Coal Company, Coal.....	680 41
	8880	Constable Bros., Estimate on Contract	2,414 65
22	8881	Conrad J. Brown, Hay	8 45
	8882	Geo. C. Gensheimer, Ass't Secy., Sundries	23 96

JANUARY—Continued.

TO PAY VOUCHER.

<i>Date. No.</i>	<i>Of</i>	<i>For</i>	<i>Amount.</i>
22 8883	Keystone Carriage Works,		
	Wagon Repairs.....	\$	55 70
8884	Pay Roll, Street Work,		
	Disbursed by M. L. Whitley, Clerk.....		246 66
8885	Erie City Iron Works,		
	Boilers		7,465 33
8886	William P. Mason,		
	Analyses of Water for 1897.....		343 00
29 8887	Geo. C. Gensheimer, Ass't Secy.,		
	Sundries.....		10 90
8888	Pay Roll, Street Work,		
	Disbursed by M. L. Whitley, Clerk.....		248 97
Total.....			\$13,342 21

FEBRUARY.

TO PAY VOUCHER.

<i>Date. No.</i>	<i>Of</i>	<i>For</i>	<i>Amount.</i>
1 8889	Pay Roll—Pumping Station,		
	Disbursed by Geo. C. Gensheimer, Ass't Secy...\$		665 00
8890	Pay Roll—Office and Inspectors,		
	Disbursed by Geo. C. Gensheimer, Ass't Secy...		866 66
2 8891	Meehan Boiler and Construction Co.,		
	Steel Plate Chimney, No. 1.....		561 53
5 8892	Mehl & Sapper,		
	Hardware and Tools.....		1 27
8893	O. C. Thayer & Son,		
	Cement and Lime.....		1 35
8894	The Flickinger Roofing & Cornice Co., Ltd.,		
	Repairing Pump.....		2 54
8895	Erie Hard Wall Plaster Co.,		
	Hard Wall Plaster.....		3 00
8896	Edison Electric Light & Power Co.,		
	Light.....		4 23
8897	Times Publishing Company,		
	Advertising.....		4 50
8898	The Dispatch Publishing Co.,		
	Advertising.....		4 80
8899	Held, Gorenflo & Co.,		
	Advertising.....		5 00
8900	C. Kessler,		
	Brooms, Chimneys, etc.....		5 33
8901	S. S. Burton,		
	Coal.....		5 50
8902	The Herald Printing & Publishing Co.,		
	Advertising.....		6 00
8903	J. N. Blaisdell,		
	Horse Shoeing and Repairing Tools.....		6 70
8904	A. C. Ross, Agent,		
	Paint and Brushes.....		6 93
8905	Keystone Electric Company,		
	Carbon Brushes, etc.....		8 00

FEBRUARY—Continued.

TO PAY VOUCHER.

<i>Date</i>	<i>No.</i>	<i>Of For</i>	<i>Amount.</i>
5	8906	Sackett Screen Company, Tools.....	\$ 14 00
	8907	Wm. Densmore & Co., Oats.....	15 30
	8908	E. J. Riblet, Shop Rent.....	20 00
	8909	W. R. Jordan, Mason Work.....	25 44
	8910	Erie Truck & Scale Co., Coal Wagon.....	33 75
	8911	The Mohawk Refining Co., Boiler Compound.....	37 79
	8912	Wm. Schade, Labor and Material—Boilers and Tools.....	41 46
	8913	Geo. C. Gensheimer, Ass't Secy., Sundries.....	43 04
	8914	Skinner Engine Company, Boiler and Engine Repairs.....	53 97
	8915	New York & Pennsylvania Telep. and Teleg. Co., Rental of Telephones.....	56 25
	8916	J. H. Braggins, Labor and Material for Boilers.....	62 70
	8917	Globe Iron Foundry Co., Castings.....	79 89
	8918	Atlantic Refining Company, Oil.....	90 70
	8919	Chas. S. Clarke, P. M., Postal Cards.....	100 00
	8920	National Lead Company, Solder and Block Tin.....	105 99
	8921	Youghiogheny River Coal Company, Coal.....	114 56
	8922	Hays Manufacturing Co., Fittings for Connections, Pipe, etc.....	130 73
	8923	Erie Machine Shop, Engine Repairs, etc.....	143 89
	8924	Union Water Meter Company, Meter.....	198 02
	8925	Erie Mfg. & Supply Co., Hose, Oil, Tools, Waste and Packing.....	312 19
	8926	The McCreary Roofing Co., Covering Pipe, Valves, Tees, etc.....	417 03
	8927	Momeyer & Graf, Coal and Coke.....	525 13
	8928	Lake Shore Foundry, Pipe and Specials.....	2,721 09
	8929	Pay Roll—Street Work, Disbursed by M. L. Whitley, Clerk.....	249 44
12	8930	William Crane, Electrical Work.....	5 00
	8931	Geo. C. Gensheimer, Ass't Secy., Sundries.....	14 54
	8932	W. De Witt Himrod, Stationery.....	37 80

FEBRUARY—Continued.**TO PAY VOUCHER.**

<i>Date.</i>	<i>No.</i>	<i>Of For</i>	<i>Amount.</i>
12	8933	Jarecki Manufacturing Co., Fittings.....	\$ 198 08
	8934	Johannesen Mfg. Co., Office Furniture and Fixtures.....	200 00
	8935	Pay Roll—Street Work, Disbursed by M. L. Whitley, Clerk.....	257 53
	8936	Lake Shore Foundry, Pipe and Specials.....	2,200 88
19	8937	Pay Roll—Street Work, Disbursed by M. L. Whitley, Clerk.....	258 61
22	8938	A. E. Sisson, Real Estate.....	1,500 00
26	8939	Geo. C. Gensheimer, Ass't Secy., Sundries.....	8 10
	8940	Pay Roll—Street Work, Disbursed by M. L. Whitley, Clerk.....	304 35
	8941	Johannesen Mfg. Co., Office Furniture and Fixtures.....	346 50
28	8942	T. W. Shacklett, Services as Commissioner.....	150 00
	8943	William Hardwick, Services as Commissioner.....	150 00
	8944	Clark Olds, Services as Commissioner.....	150 00
	8945	Pay Roll—Pumping Station, Disbursed by Geo. C. Gensheimer, Ass't Secy...	665 00
	8946	Pay Roll—Office and Inspectors, Disbursed by Geo. C. Gensheimer, Ass't Secy...	866 66
Total.....			\$15,063 75

MARCH.**TO PAY VOUCHER.**

<i>Date.</i>	<i>No.</i>	<i>Of For</i>	<i>Amount.</i>
5	8947	Skinner Engine Company, Blue Prints.....	\$ 3 10
	8948	Rea & McKean, Printing.....	4 00
	8949	Keystone Electric Company, Fuse Block and Labor.....	4 15
	8950	O. C. Thayer & Son, Cement.....	4 20
	8951	J. N. Blaisdell, Horse Shocing, etc.....	4 25
	8952	C. Kessler, Soap, etc.....	4 30
	8953	The Flickinger Roofing & Cornice Co., Ltd., Iron Pump.....	4 50
	8954	G. J. Gebhardt, Coal.....	5 75

MARCH—Continued.**TO PAY VOUCHER.**

<i>Date.</i>	<i>No.</i>	<i>Of For</i>	<i>Amount.</i>
5	8955	Mehl & Sapper, Hardware, Packing, Tools.....\$	6 69
	8956	Erie Gas Company, Coke.....	8 25
	8957	Geo. C. Gensheimer, Ass't Secy., Sundries.....	8 74
	8958	A. S. Pinney, Hardware and Tools	14 62
	8959	Wm. F. Nick, Oil and Paint.....	14 82
	8960	Erie Machine Shop, Engine Repairs and Tools.....	17 26
	8961	Winschel & Company, Linoleum and Rubber.....	18 10
	8962	J. H. Braggins, Galvanized Iron and Labor.....	19 87
	8963	E J. Riblet, Shop Rent.....	20 00
	8964	Jarecki Manufacturing Co., Fittings	20 42
	8965	Herald Printing & Publishing Co., Stationery.....	23 11
	8966	Mutual Telephone Company, Rental of Telephones.....	26 00
	8967	Thomson Meter Co., Repairing Meters.....	41 30
	8968	Erie Oil Works, Oil.....	51 25
	8969	Youghiogheny River Coal Company, Coal.....	52 31
	8970	Hays Manufacturing Co., Pipe and Fittings.....	74 86
	8971	Erie Mfg. and Supply Co., Gauge Cocks, Valves, Packing, etc.....	114 54
	8972	The McCreary Roofing Co., Covering Pipes and Valves.....	154 13
	8973	Pay Roll—Street Work, Disbursed by M. L. Whitley, Clerk.....	277 84
	8974	Murphy Bros., Copper Pans.....	2 90
	8975	Times Publishing Company, Printing.....	18 00
	8976	Globe Iron Foundry Co., Castings and Drawings.....	44 22
	8977	A. E. Sisson, Real Estate.....	400 00
12	8978	Pay Roll—Street Work, Disbursed by M. L. Whitley, Clerk.....	341 05
	8979	Geo. C. Gensheimer, Ass't Secy., Sundries... ..	8 00
19	8980	Geo. C. Gensheimer, Ass't Secy., Sundries.....	9 31
	8981	Pay Roll—Street Work, Disbursed by M. L. Whitley, Clerk.....	345 79

MARCH—Continued.**TO PAY VOUCHER.**

<i>Date.</i>	<i>No.</i>	<i>Of</i>	<i>For</i>	<i>Amount.</i>
26	8982	Geo. C. Gensheimer, Ass't Secy.,		
		Sundries.....	\$	13 75
	8983	Dispatch Printing & Engraving Co., Ltd.,		
		Printing.....		20 00
	8984	Patrick Doyle,		
		Top Dressing.....		24 00
	8985	Pay Roll—Street Work.		
		Disbursed by M. L. Whitley, Clerk.....		378 64
Total.....				\$ 2,604 02

APRIL.**TO PAY VOUCHER.**

<i>Date.</i>	<i>No.</i>	<i>Of</i>	<i>For</i>	<i>Amount.</i>
1	8986	Pay Roll—Pumping Station,		
		Disbursed by Geo. C. Gensheimer, Ass't Secy ..	\$	665 00
	8987	Pay Roll—Office and Inspectors,		
		Disbursed by Geo. C. Gensheimer, Ass't Secy...		866 66
2	8988	Pay Roll—Street Work,		
		Disbursed by M. L. Whitley, Clerk.		482 57
7	8989	Peter McLeod,		
		Estimate on Contract Altering Buildings.....		500 00
9	8990	Lyman Felheim,		
		Lumber.....		2 52
	8991	Hollands Mfg. Co.,		
		Tools.....		2 66
	8992	South Erie Iron Works,		
		Castings.....		2 76
	8993	R. T. Williams & Co.,		
		Plumbing Material.		3 57
	8994	C. Kessler,		
		Brooms and Wicks.....		3 60
	8995	Herald Printing & Publishing Co.,		
		Stationery		4 75
	8996	Skinner Engine Company,		
		Blue Prints and Castings.....		5 85
	8997	J. N. Blaisdell,		
		Horse Shoeing and Tools.....		6 05
	8998	Wm. F. Nick & Son,		
		Oil, Paint and Varnish.....		6 05
	8999	Keystone Electric Company,		
		Repairing Electric Light Plant.....		6 70
	9000	A. S. Pinney,		
		Hardware and Tools.		7 50
	9001	Conrad J. Brown,		
		Hay.....		8 65
	9002	Henry Beckman & Son,		
		Grass Seed.....		9 10
	9003	James L. Firman,		
		Teaming.....		9 36
	9004	Erie Machine Shop,		
		Engine Repairs.....		9 40

APRIL—Continued.

TO PAY VOUCHER.

<i>Date.</i>	<i>No.</i>	<i>Of For</i>	<i>Amount.</i>
9	9005	O. C. Thayer & Son, Cement and Pipe.....\$	9 42
	9006	John Mayerhoefer, Repairing Tools.....	12 50
	9007	Mehl & Sapper, Hardware and Tools.....	13 37
	9008	Patrick Doyle, Top Dressing.. ..	16 00
	9009	The Estate of Wm. E. Bell, Deceased, Mary A. Bell, Administratrix, Taxes.....	16 00
	9010	Geo. C. Gensheimer, Ass't Secy., Sundries.....	16 27
	9011	Wm. Densmore & Co., Oats.....	17 50
	9012	E. J. Riblet, Shop Rent.....	20 00
	9013	Merchants & Manufacturers Electric Light, Heat and Power Co., Electric Light Fixtures—for Office.....	20 93
	9014	Harold M. Sturgeon, Insurance.....	25 00
	9015	Globe Iron Foundry Co., Castings.....	27 74
	9016	Thos. G. Morse, Telephones.....	28 85
	9017	The Mohawk Refining Co., Boiler Compound.....	37 40
	9018	The J. L. Mott Iron Works, Material for Engine No. 4.....	42 00
	9019	Jarecki Manufacturing Co., Fittings	53 44
	9020	The Atlantic Refining Company, Oil.....	94 17
	9021	Erie Mfg. & Supply Co., Tools, Packing, Valves, etc.....	118 75
	9022	Youghiogheny River Coal Company, Coal.....	121 62
	9023	Henry R. Worthington, Valves.....	132 77
	9024	Hays Manufacturing Co., Fittings.....	142 04
	9025	F. A. Mizener, Coal.....	146 81
	9026	Momeyer & Graf, Coal.....	223 31
	9027	Geo. C. Gensheimer, Ass't Secy., Sundries.....	42 16
	9028	Herald Printing & Publishing Co., Printing and Stationery.....	342 50
	9029	Pay Roll—Street Work, Disbursed by M. L. Whitley, Clerk.....	364 91
16	9030	Geo. C. Gensheimer, Ass't Secy., Sundries.....	130 97

APRIL—Continued.**TO PAY VOUCHER.**

<i>Date.</i>	<i>No.</i>	<i>Of</i>	<i>For</i>	<i>Amount.</i>
16	9031	Pay Roll—Street Work,		
		Disbursed by M. L. Whitley, Clerk.....\$		383 75
	9032	The Lake Shore & Michigan Southern Ry. Co.,		
		Freight.....		18 53
23	9033	Times Publishing Company,		
		Time Books.....		33 50
	9034	Geo. C. Gensheimer, Ass't Secy.,		
		Sundries.....		176 63
	9035	Pay Roll—Street Work,		
		Disbursed by M. L. Whitley, Clerk.....		439 87
30	9036	The Lake Shore & Michigan Southern Ry. Co.,		
		Freight.....		18 23
	9037	Wm. Schade,		
		Tools, Labor, etc.....		38 68
	9038	T. W. Shacklett,		
		Services as Commissioner.....		150 00
	9039	William Hardwick,		
		Services as Commissioner.....		150 00
	9040	Clark Olds,		
		Services as Commissioner.....		150 00
	9041	Constable Bros.,		
		Labor and Material on Buildings.....		291 74
	9042	Pay Roll—Street Work,		
		Disbursed by M. L. Whitley, Clerk.....		442 99
	9043	Pay Roll—Pumping Station,		
		Disbursed by Geo. C. Gensheimer, Ass't Secy...		665 00
	9044	Peter McLeod,		
		Estimate on Contract Altering Buildings.....		700 00
	9045	Pay Roll—Office and Inspectors,		
		Disbursed by Geo. C. Gensheimer, Ass't Secy...		866 66
Total.....				\$ 9,344 76

MAY.**TO PAY VOUCHER.**

<i>Date.</i>	<i>No.</i>	<i>Of</i>	<i>For</i>	<i>Amount.</i>
7	9046	C. Kessler,		
		Baskets and Oil.....\$		1 80
	9047	Times Publishing Company,		
		Advertising.....		2 10
	9048	Erie Gas Company,		
		Coke.....		2 47
	9049	Wm. F. Nick & Son,		
		Varnish, etc.....		2 65
	9050	P. J. Schotten,		
		Gravel.....		2 70
	9051	A. S. Pinney,		
		Hardware and Tools.....		3 14
	9052	Brown & Thomas,		
		Iron.....		3 14
	9053	J. N. Blaisdell,		
		Horse Shoeing.....		4 00

WATER WORKS, IN THE CITY OF ERIE.

25

MAY—Continued.

TO PAY VOUCHER

<i>Date.</i>	<i>No.</i>	<i>Of For</i>	<i>Amount.</i>
7	9054	Held, Gorenflo & Co., Advertising.....	\$ 5 00
	9055	Mehl & Sapper, Hardware and Tools.....	5 26
	9056	Patrick Doyle, Dressing... ..	6 80
	9057	J. M. Dunn, Brick.....	7 87
	9058	Jas. L. Firman, Dressing.....	9 20
	9059	The Dispatch Publishing Co., Advertising.....	9 20
	9060	Erie Sand & Gravel Co., Sand.....	9 90
	9061	David Schlosser, Lumber.....	10 51
	9062	Lyman Felheim, Meter Boxes.....	11 70
	9063	Zuck Hardware Co., Hardware and Tools	12 27
	9064	Wm. Densmore & Co., Oats.....	17 50
	9065	New York & Pennsylvania Telep. & Teleg. Co., Rental of Telephones.....	18 75
	9066	E. J. Riblet, Shop Rent.....	20 00
	9067	The Griswold Mfg. Co., Cups.....	20 00
	9068	Dispatch Printing & Engraving Co., Ltd., Printing and Stationery.....	20 00
	9069	Mutual Telephone Company, Rental of Telephones.....	22 00
	9070	Pennsylvania Company, Cross Ties and Spikes	29 50
	9071	G. J. Gebhardt, Coal.....	29 91
	9072	R. T. Walker, Barn Rent.....	30 00
	9073	Globe Iron Foundry Co., Castings.....	37 04
	9074	Jarecki Manufacturing Co., Fittings.....	44 30
	9075	Erie Oil Works, Oil.....	51 75
	9076	Hays Manufacturing Co., Fittings and Pipe.....	80 44
	9077	Ashby & Vincent, Printing and Stationery.....	96 23
	9078	Union Water Meter Company, Meter.....	99 01
	9079	O. C. Thayer & Son, Cement and Pipe.....	114 19
	9080	Erie Mfg. & Supply Co., Hose, Tools, Valves, Waste, etc.....	127 14

REPORT OF THE COMMISSIONERS OF

MAY—Continued.**TO PAY VOUCHER.**

<i>Date.</i>	<i>No.</i>	<i>Of</i>	<i>For</i>	<i>Amount.</i>
7	9081	R. D. Wood & Co.,	Valves.....	\$ 165 00
	9082	Youghiogeny River Coal Company,	Coal.....	250 01
	9083	Momeyer & Graf,	Coal.....	352 88
	9084	Henry R. Worthington,	Packing.....	503 50
	9085	Jos. H. King & Co.,	Teaming.....	31 65
	9086	Geo. C. Gensheimer, Assistant Secretary,	Sundries.....	49 06
	9087	Herald Printing & Publishing Co.,	Advertising and Stationery.....	8 40
	9088	W. P. Mason,	Analyses of Water.....	51 00
	9089	Pay Roll, Street Work,	Disbursed by M. L. Whitley, Clerk.....	499 75
	9090	Constable Bros.,	Labor and Material on Buildings.....	19 10
14	9091	F. R. Dravo,	Professional Services.....	34 80
	9092	Geo. C. Gensheimer, Assistant Secretary,	Sundries.....	67 31
	9093	Peter McLeod,	Estimate on Contract Altering Building.....	100 00
	9094	Pay Roll, Street Work,	Disbursed by M. L. Whitley, Clerk.....	439 25
21	9095	Geo. C. Gensheimer, Assistant Secretary	Sundries.....	33 09
	9096	Pay Roll, Street Work,	Disbursed by M. L. Whitley, Clerk.....	592 18
28	9097	Pay Roll, Street Work,	Disbursed by M. L. Whitley, Clerk.....	793 59
	9098	Geo. C. Gensheimer, Assistant Secretary,	Sundries.....	8 23
Total.....				<u>\$4,966 27</u>

JUNE.**TO PAY VOUCHER.**

<i>Date.</i>	<i>No.</i>	<i>Of</i>	<i>For</i>	<i>Amount.</i>
1	9099	A. E. Sisson,	Legal Services.....	\$ 75 00
	9100	The Lake Shore and Michigan Southern Ry. Co.,	Freight.....	341 59
	9101	Pay Roll—Pumping Station,	Disbursed by Geo. C. Gensheimer, Ass't Secy...	720 00
	9102	Pay Roll—Office and Inspectors,	Disbursed by Geo. C. Gensheimer, Ass't Secy...	866 66
	9103	E. J. Morton,	Sewer Jacks.....	85 42

JUNE—Continued.

TO PAY VOUCHER.

<i>Date.</i>	<i>No.</i>	<i>Of For</i>	<i>Amount.</i>
2	9104	John Wahl Commission Co., Pig Lead.....	\$ 1,160 04
4	9105	The Flickinger Roofing and Cornice Co. Ltd., Tools.....	2 20
	9106	G. J. Gebhardt, Wood.....	2 25
	9107	Erie Sand and Gravel Co., Sand.....	3 00
	9108	Pennsylvania Company, Spikes, Splice Bars and Bolts,.....	3 20
	9109	Lyman Felheim, Meter Box.....	4 35
	9110	J. Jacobs, Oil Clothing.....	5 00
	9111	Bauman & Son, Cleaning and Repairing Carpet.....	5 25
	9112	Mehl & Sapper, Hardware and Tools.....	6 20
	9113	Henry J. Sevin, Mounting and Framing Map.....	6 25
	9114	J. M. Dunn, Brick.....	6 30
	9115	Emil Streuber, Leather.....	6 30
	9116	Wm. F. Nick & Son, Oil, Paint etc,.....	6 53
	9117	Erie Window Glass Co., Glass.....	6 72
	9118	Erie Machine Shop, Bolts, Washers, Labor.....	7 10
	9119	National Meter Company, Meter Repairs.....	7 11
	9120	A. J. Louch, Hose.....	7 50
	9121	A. T. Adams, Horse Shoeing.....	8 00
	9122	Henry Beckman & Son, Grass Seed.....	8 25
	9123	Wm. Schade, Braces, Tools, etc.....	8 36
	9124	C. Kessler, Blocks, Soap, etc,.....	9 44
	9125	J. H. Braggins, Labor and Material on Buildings.....	9 97
	9126	W. H. Maloney & Co., Trees.	10 00
	9127	Erie Gas Company, Coke.....	10 11
	9128	Momeyer & Graf, Coke.....	10 51
	9129	Geo. C. Gensheimer, Ass't Secy., Sundries.....	18 10

REPORT OF THE COMMISSIONERS OF

JUNE—Continued.

TO PAY VOUCHER.

<i>Date.</i>	<i>No.</i>	<i>Of For</i>	<i>Amount.</i>
4	9130	Wm. Densmore & Co., Oats.....	\$ 20 00
	9131	E. J Riblet, Shop Rent.....	20 00
	9132	Keystone Electric Company, Electric Light Supplies	33 85
	9133	Lester J. Zuck, Hardware and Tools.....	34 62
	9134	The Mohawk Refining Co., Boiler Compound.....	38 05
	9135	David Schlosser, Lumber.....	41 41
	9136	Jarecki Manufacturing Co., Fittings.....	46 14
	9137	Union Water Meter Company, Meter and Repairs.....	58 20
	9138	Globe Iron Foundry Co., Castings.....	66 22
	9139	O. C. Thayer & Son, Cement, Pipe, etc.....	69 11
	9140	The Atlantic Refining Co., Oil.....	97 84
	9141	Erie Mfg. and Supply Co., Hose, Valves, Pipe Covering, etc.....	125 80
	9142	Peter McLeod, Estimate on Contract Altering Building.....	145 70
	9143	Joseph H. King & Co., Teaming.....	175 27
	9144	R. D. Wood & Co., Fire Hydrants and Valves.....	400 00
	9145	C. N. Hathaway, Mason Work.....	2 80
	9146	A. S. Pinney, Hardware and Tools.....	6 62
	9147	J. O. Jones, Repairing Roof.....	13 54
	9148	Hays Manufacturing Co., Fittings.....	125 02
	9149	Pay Roll—Street Work Disbursed by M. L. Whitley, Clerk.....	851 18
7	9150	John Wahl Commission Co., Pig Lead.....	1,741 45
11	9151	Geo. C. Gensheimer, Ass't Secy., Sundries.....	9 30
	9152	Pay Roll—Street Work, Disbursed by M. L. Whitley, Clerk.....	967 73
16	9153	Skinner Engine Company, On Contract Automatic Engine.....	300 00
18	9154	Pay Roll—Street Work, Disbursed by M. L. Whitley, Clerk.....	776 94
23	9155	The National Carbon Co., Carbons.....	23 39

JUNE—Continued.**TO PAY VOUCHER.**

<i>Date.</i>	<i>No.</i>	<i>Of For</i>	<i>Amount.</i>
25	9156	Geo. C. Gensheimer, Ass't Secy., Sundries.....	\$ 48 12
	9157	Skinner Engine Company, On Contract Automatic Engine.....	170 00
	9158	Pay Roll—Street Work, Disbursed by M. L. Whitley, Clerk.....	920 41
	9159	Keystone Electric Company, On Contract Electric Light Plant.....	1,500 00
Total.....			\$ 12,255 42

JULY.**TO PAY VOUCHER.**

<i>Date.</i>	<i>No.</i>	<i>Of For</i>	<i>Amount.</i>
1	9160	T. W. Shacklett, Services as Commissioner.....	\$ 150 00
	9161	William Hardwick, Services as Commissioner.....	150 00
	9162	Clark Olds, Services as Commissioner... ..	150 00
	9163	The Lake Shore & Michigan Southern Ry. Co., Freight.....	401 47
	9164	Erie Painting & Decorating Co., To Apply on Contract Painting.....	500 00
	9165	Pay Roll—Pumping Station, Disbursed by Geo. C. Gensheimer, Ass't Secy...	720 00
	9166	Pay Roll—Office and Inspectors, Disbursed by Geo. C. Gensheimer, Ass't Secy...	866 66
	9167	Board of Commissioners of the Sinking Fund, Sinking Fund, City of Erie.....	5,000 00
2	9168	Pay Roll—Street Work, Disbursed by M. L. Whitley, Clerk.....	872 97
	9169	Geo. C. Gensheimer, Ass't Secy., Sundries.....	10 01
	9170	Sam B. Kennedy Jr., Agent, Lawn Sprinklers.....	15 00
7	9171	Keystone Electric Company, On Contract Electric Light Plant.....	1,000 00
11	9172	Pay Roll—Street Work, Disbursed by John Kolb, Book Keeper.....	707 75
	9173	T. W. Mahany, Pails and Rolled Oats.....	2 00
	9174	Hollands Mfg. Co., Tools.....	2 02
	9175	Skinner Engine Company, Piece of Boiler Plate.....	2 68
	9176	Mehl & Sapper, Hardware.....	3 30
	9177	Erie Heating & Plumbing Co., Plumbing Material.....	3 65
	9178	John J. O'Brien, Printing.....	4 25

JULY—Continued.**TO PAY VOUCHER.**

<i>Date.</i>	<i>No.</i>	<i>Of For</i>	<i>Amount.</i>
11	9179	Brown & Thomas, Iron Rails.....	\$ 4 50
	9180	Erie Gas Company, Coke.....	4 71
	9181	A. T. Adams, Horse Shoeing.....	4 80
	9182	Murphy Bros., Water Cooler.....	5 00
	9183	The Atlantic Refining Company, Oil.....	6 00
	9184	Mutual Telephone Company, Rental of Telephone.....	6 00
	9185	C. Kessler, Brooms, Baskets, etc.....	6 47
	9186	Lake Shore Brick Works, Brick.....	6 60
	9187	J. Kretz, Agent, Rope—Old.....	6 90
	9188	A. J. Louch, Tools.....	8 26
	9189	Henry A. Niemeyer, Material at Reservoir.....	10 00
	9190	F. H. Leland, Testing Electric Light Plant.....	10 00
	9191	Adolph Brugger, Wooden Plugs.....	12 15
	9192	Henry Beckman & Son, Blocks, Rope, Oars, etc.....	13 57
	9193	Winschel & Company, Carpet for Office.....	15 73
	9194	Lester J. Zuck, Hardware and Tools.....	16 52
	9195	Wm. F. Nick & Son, Oils and Paints.....	16 69
	9196	Ashby & Vincent, Indexing Books and Stationery.....	17 95
	9197	New York & Penna. Telep. and Teleg. Co., Rental of Telephone.....	18 75
	9198	E. J. Riblet, Shop Rent.....	20 00
	9199	Wm. Densmore & Co., Oats.....	20 00
	9200	Geo. C. Gensheimer, Ass't Secy., Sundries.....	22 69
	9201	Titus Berst, Flower Beds at Pumping Station.....	36 00
	9202	Peter Koole, Repairing Boats.....	36 07
	9203	Pennsylvania Company, Cinders.....	40 18
	9204	Erie Machine Shop, Engine Repairs.....	42 10
	9205	Stearns Manufacturing Co., Drawing Boards.....	54 00

JULY—Continued.

TO PAY VOUCHER.

<i>Date.</i>	<i>No.</i>	<i>Of For</i>	<i>Amount.</i>
11	9206	David Schlosser, Lumber.....	\$ 61 07
	9207	Erie Oil Works, Oil.....	65 70
	9208	The Crandall Fence & Iron Co., Lawn Settees.....	77 00
	9209	J. M. Dunn, Brick.....	82 00
	9210	Young Bros., Rope—Old.....	90 00
	9211	Hays Manufacturing Co., Fittings.....	94 69
	9212	Constable Bros., Labor and Material on Buildings.....	102 58
	9213	Globe Iron Foundry Co., Castings.....	109 63
	9214	O. C. Thayer & Son, Cement and Pipe.....	111 10
	9215	Mayer Bros., Repairs to Asphalt Pavements... ..	140 71
	9216	Joseph H. King & Co., Teaming.....	232 40
	9217	F. A. Mizener, Coal.....	245 46
	9218	Erie Mfg. & Supply Co., Fittings, Tools, etc.....	476 62
16	9219	F. P. Gill, Cupboard.....	5 00
	9220	A. J. Louch, Awning and Frame.....	7 00
	9221	Geo C. Gensheimer, Ass't Secy, Sundries.....	27 09
	9222	Erie City Iron Works, Labor and Material on Boilers.....	70 22
	9223	Keystone Electric Company, On Contract Electric Light Plant.....	183 68
	9224	Erie Painting & Decorating Co., On Contract Painting.....	420 01
	9225	Globe Iron Foundry Co., Castings.....	140 70
	9226	Pay Roll—Street Work, Disbursed by John Kolb, Book Keeper.....	869 09
23	9227	Pay Roll—Street Work, Disbursed by M. L. Whitley, Clerk.....	915 99
25	9228	The Lake Shore & Michigan Southern Ry. Co., Freight.....	288 08
30	9229	Geo. C. Gensheimer, Ass't Secy., Sundries.....	16 31
	9230	Pay Roll—Pumping Station, Disbursed by Geo. C. Gensheimer, Ass't Secy....	720 00
	9231	Pay Roll—Office and Inspectors, Disbursed by Geo C. Gensheimer, Ass't Secy....	866 66
	9232	Pay Roll—Street Work, Disbursed by M. L. Whitley, Clerk.....	921 01
Total.....			\$ 18,363 20

AUGUST.

TO PAY VOUCHER.

<i>Date.</i>	<i>No.</i>	<i>Of</i>	<i>For</i>	<i>Amount.</i>
6	9233	Skinner Engine Company,	Oil Feeder.....\$	2 00
	9234	Times Publishing Company,	Advertising.....	2 13
	9235	Wm. F. Nick & Son,	Lead, Oil, etc.....	2 55
	9236	Murphy Bros.,	Funnel and Ventilator.....	2 65
	9237	H. G. Fink,	Stakes.....	2 75
	9238	Fire and Water,	One Year's Subscription.....	3 00
	9239	Geo. Schlindwein,	Repairing Harness.....	3 00
	9240	Herald Printing & Publishing Co.,	Advertising.....	4 00
	9241	Held, Gorenflo & Co.,	Advertising.....	4 00
	9242	Edison Construction and Supply Department,	Iron Conduit.....	5 00
	9243	Ashby & Vincent,	Stationery.....	5 16
	9244	A. T. Adams,	Horse Shoeing	5 20
	9245	C. Kessler	Bunting, Soap, etc	7 99
	9246	Lyman Felheim,	Meter Boxes	9 00
	9247	The Dispatch Publishing Co.,	Advertising.....	9 60
	9248	The Flickinger Roofing & Cornice Co., Ltd.,	Lanterns and Pails	11 30
	9249	G. J. Gebhardt,	Coal and Wood.....	14 25
	9250	Lester J. Zuck,	Hardware and Tools.....	16 65
	9251	Erie Machine Shop,	Tools and Labor.....	17 50
	9252	Herald Printing & Publishing Co.,	Stationery.....	18 80
	9253	Wm. Densmore & Co.,	Bran and Oats.....	18 90
	9254	E. J. Riblet,	Shop Rent.....	20 00
	9255	Robt. J. Saltsman,	Coal and Wood.....	24 00
	9256	The Crouse-Tremaine Carbon Co.,	Carbons and Bottoms.....	24 74
	9257	David Schlosser,	Lumber.....	28 64
	9258	Constable Bros.,	Labor and Material on Buildings.....	31 06
	9259	J. C. Elviage,	Professional Services and Use of Horse.....	36 00

AUGUST—Continued.

TO PAY VOUCHER.

<i>Date.</i>	<i>No.</i>	<i>Of For</i>	<i>Amount.</i>
6	9260	Mutual Telephone Company, Telephone Rental.....\$	42 00
	9261	Geo. C. Gensheimer, Assistant Secretary, Sundries.....	45 95
	9262	The Lake Shore & Michigan Southern Ry. Co., Freight.....	58 88
	9263	D. Long, Collector, Taxes.....	59 75
	9264	Isador Sobel, Postmaster, Postal Cards.....	60 00
	9265	O. C. Thayer & Son, Cement and Tile.....	71 94
	9266	J. M. Dunn, Brick	87 67
	9267	The Atlantic Refining Company, Oil.....	96 32
	9268	Union Water Meter Company, Meters.....	104 34
	9269	Henry R. Worthington, Pump.....	120 00
	9270	Hays Manufacturing Co., Fittings, etc.....	137 84
	9271	Joseph H. King & Co., Teaming.....	142 02
	9272	Erie Mfg. & Supply Co., Injector, Tools, Valves.....	212 07
	9273	F. A. Sherrer, Sustaining Wall....	280 00
	9274	F. A. Mizener, Coal.....	507 31
	9275	R. D. Wood & Co., Fire Hydrants and Stop Valves.....	746 50
	9276	Momeyer & Graf, Coal and Coke.....	24 40
	9277	Pay Roll, Street Work, Disbursed by M. L. Whitley, Clerk.....	990 50
13	9278	Geo. C. Gensheimer, Assistant Secretary, Sundries.....	25 94
	9279	Mayer Bros., Repairs to Pavement.....	333 09
	9280	Pay Roll, Street Work, Disbursed by M. L. Whitley, Clerk.....	957 63
20	9281	John Stubbe, Repairs to Pavement.....	20 13
	9282	Keller & Nerz, Stone... ..	35 00
	9283	Pennsylvania Company, Cinders.....	40 18
	9284	Lake Shore Brick Works, Brick.....	461 10
	9285	Pay Roll, Street Work, Disbursed by M. L. Whitley, Clerk.....	915 85
27	9286	The Lake Shore & Michigan Southern Ry. Co., Freight.....	25 50

REPORT OF THE COMMISSIONERS OF

AUGUST—Continued.

TO PAY VOUCHER.

<i>Date.</i>	<i>No.</i>	<i>Of</i>	<i>For</i>	<i>Amount.</i>
27	9287	Pay Roll, Street Work, Disbursed by M. L. Whitley, Clerk.....	\$	921 45
31	9288	T. W. Shacklett, Services as Commissioner.		150 00
	9289	William Hardwick, Services as Commissioner.....		150 00
	9290	Clark Olds, Services as Commissioner.....		150 00
	9291	Pay Roll—Pumping Station, Disbursed by John Kolb, Acting Ass't Sec'y.....		720 00
	9292	Pay Roll—Office and Inspectors, Disbursed by John Kolb, Acting Ass't Sec'y.....		866 66
Total.....				\$ 9,889 89

SEPTEMBER.

TO PAY VOUCHER.

<i>Date.</i>	<i>No.</i>	<i>Of</i>	<i>For</i>	<i>Amount.</i>
3	9293	Pay Roll—Street Work, Disbursed by M. L. Whitley, Clerk.....	\$	964 45
	9294	T. S. Buck, Dating Stamp.....		2 08
	9295	McIntire & Tanner, S. C. Faucet.....		2 25
	9296	G. J. Gebhardt, Wood.....		2 25
	9297	Baas & Althof, Wire Screen.....		2 50
	9298	Mehl & Sapper, Hardware and Tools.....		2 72
	9299	Keystone Electric Company, Carbons and Holders		2 75
	9300	Harry Thompson, Repairing Coupon Cutters.....		2 75
	9301	Wm. F. Nick & Son, Oil, Paint and Brushes.....		4 28
	9302	The Flickinger Roofing and Cornice Co. Ltd., Pails, Plunger, Labor, etc.....		7 65
	9303	Keystone Rubber Works, Packing.....		8 10
	9304	Lyman Felheim, Meter Boxes.....		8 70
	9305	W. E. Hayes & Co., Lamps, Chimneys, Wicks.....		8 75
	9306	C. Kessler, Baskets, Brooms, etc.....		9 43
	9307	Erie Steam Bending Works, Stakes.....		10 00
	9308	Conrad J. Brown, Hay.....		10 60

SEPTEMBER—Continued.**TO PAY VOUCHER.**

<i>Date.</i>	<i>No.</i>	<i>Of For</i>	<i>Amount.</i>
3	9309	The Atlantic Refining Company, Oil.....	\$ 11 25
	9310	The Henesey Mfg. Co., Leather Washers.....	12 00
	9311	South Erie Iron Works, Castings.....	13 32
	9312	Lester J. Zuck, Hardware and Tools.....	13 39
	9313	E. J. Riblet, Shop Rent.....	20 00
	9314	A. S. Pinney, Hardware and Tools.....	18 40
	9315	Dispatch Printing & Engraving Co., Ltd., Printing and Stationery.....	23 50
	9316	Wm. Schade, Boiler and Engine Repairs.....	30 47
	9317	Pittsburgh Meter Company, Meters.....	35 75
	9318	F. P. Gill, Labor, Patterns, etc.....	40 60
	9319	O. C. Thayer & Son, Cement and Pipe.....	57 28
	9320	Erie Oil Works, Oil.....	68 05
	9321	Geo. C. Gensheimer, Ass't Secy., Sundries.....	77 86
	9322	Keystone Brass Co., Railings and Fittings.....	86 61
	9323	Erie Mfg. and Supply Co., Gaskets, Tools and Packing.....	88 08
	9324	J. M. Dunn, Brick.....	138 60
	9325	Erie Machine Shop, Repairing Engines.....	204 24
	9326	Globe Iron Foundry Co. Castings.....	210 55
	9327	F. A. Mizener, Coal.....	329 53
	9328	Union Water Meter Company, Meters.....	345 05
	9329	R. D. Wood & Co., Fire Hydrants and Stop Valves.....	720 94
	9330	Lake Shore Foundry, Pipe.....	841 54
	9331	Board of Commissioners of the Sinking Fund of the City of Erie, The Sinking Fund City of Erie.....	5,000 00
	9332	Austin Separator Co., Separator.....	26 64
10	9333	Pay Roll—Street Work, Disbursed by M. L. Whitley, Clerk.....	593 75
	9334	L. H. Hall, Painting.....	6 00

SEPTEMBER—Continued.**TO PAY VOUCHER.**

<i>Date.</i>	<i>No.</i>	<i>Of</i>	<i>For</i>	<i>Amount.</i>
17	9335	Geo. C. Gensheimer, Ass't Secy.,		
		Sundries.....	\$	4 02
	9336	Pay Roll—Street Work,		
		Disbursed by M. L. Whitley, Clerk.....		672 93
	9337	Richard Gebele,		
		Trimming Trees.....		6 50
24	9338	The Lake Shore & Michigan Southern Ry. Co.,		
		Freight.....		9 00
	9339	Pay Roll—Street Work,		
		Disbursed by M. L. Whitley, Clerk.....		573 25
Total.....				\$ 11,328 36

OCTOBER.**TO PAY VOUCHER.**

<i>Date.</i>	<i>No.</i>	<i>Of</i>	<i>For</i>	<i>Amount.</i>
1	9340	Geo. C. Gensheimer, Ass't Secy.,		
		Sundries.....	\$	62 96
	9341	John Stubbe,		
		Repairing Pavement.....		232 25
	9342	Pay Roll—Street Work,		
		Disbursed by M. L. Whitley, Clerk.....		588 31
	9343	Pay Roll—Pumping Station,		
		Disbursed by Geo. C. Gensheimer, Ass't Secy...		720 00
	9344	Pay Roll—Office and Inspectors,		
		Disbursed by Geo. C. Gensheimer, Ass't Secy...		866 66
8	9345	Jas. H. Matthews & Co.,		
		Stamp and Pad.....		1 32
	9346	Culhane & Joslin,		
		Labor.....		1 75
	9347	A. S. Pinney,		
		Hardware and Tools.....		2 26
	9348	Skinner Engine Company,		
		Difference in Valves.....		2 50
	9349	National Meter Company,		
		Meter Counter.....		2 71
	9350	A. V. Fox,		
		Horse Shoeing.....		4 00
	9351	W. H. Dickson,		
		Dynamite, Caps and Fuse.....		4 07
	9352	C. Kessler,		
		Soap, Gold Dust, etc.....		5 68.
	9353	A. T. Adams,		
		Horse Shoeing.....		6 00
	9354	Lester J. Zuck,		
		Hardware and Tools.....		6 37
	9355	Herald Printing & Publishing Co.,		
		Books.....		7 65
	9356	Union Ice Company,		
		Ice.....		7 65

OCTOBER—Continued.**TO PAY VOUCHER.**

<i>Date. No.</i>	<i>Of For</i>	<i>Amount</i>
8 9357	The Lake Shore & Michigan Southern Ry. Co., Freight.....	9 00
9358	Erie Steam Bending Works, Stakes.....	15 00
9359	Wm. Densmore & Co., Oats.....	17 50
9360	Not Issued	
9361	J. M. Dunn, Brick... ..	19 95
9362	Momeyer & Graf, Coke.....	19 99
9363	Adolph Brugger, Wooden Plugs.....	22 70
9364	E. J. Riblet, Shop Rent and Stool.....	22 75
9365	Wm. Schade, Blacksmithing	25 05
9366	Dr. J. C. Elviage, Professional Services and use of Horses.....	26 25
9367	Constable Bros., Labor and Material on Buildings.....	26 60
9368	Globe Iron Foundry Co , Castings.....	51 02
9369	The National Carbon Co., Carbons.....	54 45
9370	O. C. Thayer & Son, Cement and Pipe.....	57 70
9371	F. A. Sherrer, Stone	61 00
9372	Erie Mfg. & Supply Co., Packing, Valves. etc.....	78 72
9373	The Atlantic Refining Company, Oil.....	97 33
9374	Hays Manufacturing Co., Fittings.....	136 54
9375	R. D. Wood & Co., Valves.....	244 02
9376	F. A. Mizener, Coal.....	295 48
9377	The Fairbanks Company, Pressure Regulators.....	393 81
9378	Jarecki Manufacturing Co., Valves, Fittings.....	399 24
9379	Wm. F. Nick & Son, Varnish, etc.....	1 10
9380	Geo. C. Gensheimer, Ass't Secy , Sundries.....	6 45
9381	Frank P. Thayer, Sod and Gravel.....	27 00
9382	Charles C. Shirk, City Treasurer, Sewer Assessment	57 80
9383	Joseph H. King & Co., Teaming.....	116 92

REPORT OF THE COMMISSIONERS OF

OCTOBER—Continued.

TO PAY VOUCHER.

<i>Date.</i>	<i>No.</i>	<i>Of</i>	<i>For</i>	<i>Amount.</i>
8	9384	Pay Roll—Street Work, Disbursed by M. L. Whitley, Clerk.....	\$	563 38
15	9385	Geo. C. Gensheimer, Ass't Secy., Sundries.....		5 73
	9386	Pay Roll—Street Work, Disbursed by M. L. Whitley, Clerk.....		507 22
22	9387	Geo. C. Gensheimer, Ass't Secy., Sundries.....		9 59
	9388	Pennsylvania Company, Cinder and Switching Charges.....		23 40
	9389	The Lake Shore & Michigan Southern Ry. Co., Freight.....		23 55
	9390	Pay Roll—Street Work, Disbursed by M. L. Whitley, Clerk.....		411 91
	9391	S. A. Davenport, Retainer and Professional Services in full for Four Years.....		600 00
29	9392	Mayer Bros., Repairing Pavements.....		105 95
	9393	T. W. Shacklett, Services as Commissioner.....		150 00
	9394	William Hardwick, Services as Commissioner.....		150 00
	9395	Clark Olds, Services as Commissioner.....		150 00
	9396	A. E. Sisson, Buildings and Grounds.....		240 00
	9397	Pay Roll—Street Work, Disbursed by M. L. Whitley, Clerk.....		449 17
	9398	Pay Roll—Pumping Station. Disbursed by Geo. C. Gensheimer, Ass't Secy....		720 00
	9399	Pay Roll—Office and Inspectors, Disbursed by Geo. C. Gensheimer, Ass't Secy...		866 66
	9400	Frank P. Thayer, Sod and Gravel.....		46 50
Total				\$ 9,828 57

NOVEMBER.

TO PAY VOUCHER.

<i>Date.</i>	<i>No.</i>	<i>Of</i>	<i>For</i>	<i>Amount.</i>
2	9401	Pennsylvania Company, Freight.....	\$	37 71
5	9402	A. J. Louch, Hose.....		6 85
	9403	Geo. C. Gensheimer, Ass't. Secy., Sundries.....		34 99
	9404	F. P. Gill, Pattern Work.....		58 30
	9405	F. A. Mizener, Coal.....		375 98

NOVEMBER—Continued.**TO PAY VOUCHER.**

<i>Date.</i>	<i>No.</i>	<i>Of</i>	<i>For</i>	<i>Amount.</i>
5	9406	Pay Roll—Street Work, Disbursed by M. L. Whitley, Clerk.....	\$	491 43
12	9407	Geo. C. Gensheimer, Ass't. Secy., Sundries.....		11 10
	9408	Pennsylvania Company, Freight.....		15 12
	9409	The Lake Shore & Michigan Southern Ry. Co., Freight.....		26 06
	9410	Jos. H. King & Co., Teaming.....		46 59
	9411	Thos. H. Dallett & Co., Drill.....		50 00
	9412	Pay Roll—Street Work, Disbursed by M. L. Whitley, Clerk.....		342 63
21	9413	Pennsylvania Company, Freight.....		16 07
	9414	Geo. C. Gensheimer, Ass't Secy., Sundries.....		27 64
	9415	Pay Roll—Street Work, Disbursed by M. L. Whitley, Clerk.....		397 14
26	9416	Pay Roll—Street Work, Disbursed by M. L. Whitley, Clerk.....		317 25
Total.....				\$ 2,254 86

DECEMBER.**TO PAY VOUCHER.**

<i>Date.</i>	<i>No.</i>	<i>Of</i>	<i>For</i>	<i>Amount.</i>
1	9417	Pay Roll—Pumping Station, Disbursed by Geo. C. Gensheimer, Ass't Secy....	\$	720 00
	9418	Pay Roll—Office and Inspectors, Disbursed by Geo. C. Gensheimer, Ass't Secy....		866 66
3	9419	John Stubbe, Repairing Pavement.....		1 10
	9420	Geo. C. Gensheimer, Ass't Secy., Sundries.....		5 90
	9421	Henry Herbst, Collector, Taxes.....		218 75
	9422	F. A. Mizener, Coal.....		226 57
	9423	Pay Roll—Street Work, Disbursed by M. L. Whitley, Clerk.....		315 27
10	9424	Geo. C. Gensheimer, Ass't Secy., Sundries.....		3 99
	9425	The Erie Painting & Decorating Co., Painting.....		4 13
	9426	A. V. Fox, Horse Shoeing.....		4 80
	9427	The Dispatch Publishing Co., Advertising.....		9 85

DECEMBER—Continued.**TO PAY VOUCHER.**

<i>Date.</i>	<i>No.</i>	<i>Of For</i>	<i>Amount.</i>
10	9428	Jos. H. King & Co., Teaming.....	\$ 13 93
	9429	Wm. Schade, Blacksmithing and Tools.....	15 50
	9430	Pay Roll—Street Work, Disbursed by M. L. Whitley, Clerk.....	273 85
17	9431	Held, Gorenflo & Co., Advertising.....	4 40
	9432	Herald Printing & Publishing Co., Books and Stationery.....	8 00
	9433	R. T. Walker, Barn Rent.....	30 00
	9434	Dispatch Printing & Engraving Co., Ltd., Printing and Stationery.....	30 00
	9435	Times Publishing Company, Printing and Stationery.....	78 00
	9436	Herald Printing & Publishing Co., Books and Stationery.....	89 90
	9437	Isador Sobel, Postmaster, Postage Stamps.....	100 00
	9438	T. W. Shacklett, Services as Commissioner.....	150 00
	9439	William Hardwick, Services as Commissioner.....	150 00
	9440	Clark Olds, Services as Commissioner.....	150 00
	9441	Pay Roll—Street Work, Disbursed by M. L. Whitley, Clerk.....	190 19
	9442	Pay Roll—Pumping Station, Disbursed by Geo. C. Gensheimer, Ass't Secy...	720 00
	9443	Pay Roll—Office and Inspectors, Disbursed by Geo. C. Gensheimer, Ass't Secy...	866 74
	9444	Board of Commissioners of the Sinking Fund, of the City of Erie, City of Erie, Sinking Fund.....	15,000 00
24	9445	Pay Roll—Street Work, Disbursed by M. L. Whitley, Clerk.	222 14
	9446	Wm. F. Nick & Son, Varnish and Turpentine.....	1 35
	9447	Skinner Engine Company Governor Grease.....	1 50
	9448	August Jarecki, Repairing Clock.....	1 50
	9449	The Taper Sleeve Pulley Works, Turning Valves.....	2 00
	9450	Geo. Schlindwein, Repairing Harness.....	2 30
	9451	Murphy Bros., Tools.....	2 50
	9452	Henry Mayo & Son, Carbon Bag.....	2 50
	9453	C. Kessler, Paris Green.....	2 76
	9454	Wm. F. Nick & Son, Oil and Varnish.....	3 08

WATER WORKS, IN THE CITY OF ERIE:

41

DECEMBER—Continued.

TO PAY VOUCHER.

<i>Date.</i>	<i>No.</i>	<i>Of</i>	<i>For</i>	<i>Amount.</i>
24	9455	Murphy Bros.,	Nails and Tools.....\$	3 35
	9456	Adolph Brugger,	Wooden Plugs.....	4 25
	9457	Lester J. Zuck,	Hardware and Tools.....	5 02
	9458	Brown & Thomas,	Iron Rail.....	5 10
	9459	Mehl & Sapper,	Hardware and Tools.....	5 12
	9460	The Flickinger Roofing & Cornice Co., Ltd.,	Pans and Labor.....	5 20
	9461	A. S. Pinney,	Hardware and Tools.....	5 74
	9462	Erie Gas Company,	Coke.....	5 89
	9463	New York & Penna. Telephone and Telegraph Co.,	Telephone Rental.....	6 00
	9464	Emil Streuber,	Sole Leather.....	6 24
	9465	Erie Gas Company,	Coke.....	6 25
	9466	C. Kessler,	Brooms, Mops and Soap.....	7 40
	9467	Mayer Bros.,	Repairing Cuts in Pavement.....	8 33
	9468	David Schlosser,	Lumber.....	8 57
	9469	Lester J. Zuck,	Hardware and Tools.....	8 65
	9470	Globe Iron Foundry Co.,	Castings.....	9 21
	9471	The Flickinger Roofing and Cornice Co., Ltd.,	Tools, etc.....	9 44
	9472	Kirschner Bros.,	Use of Derrick.....	9 50
	9473	A. V. Fox,	Horse Shoeing.....	9 60
	9474	Lyman Felheim,	Meter Boxes.....	10 25
	9475	Franklin Coal Co.,	Coal.....	11 00
	9476	Constable Bros.,	Labor and Material on Buildings.....	11 46
	9477	Henry R. Worthington,	Repairing Meter.....	12 30
	9478	Keystone Electric Company,	Carbons, Wire, Fuse, etc.....	12 59
	9479	Conrad J. Brown,	Hay.....	12 70
	9480	Edison Construction and Supply Dept.,	Electric Light Fittings.....	12 93
	9481	Wm. Densmore & Co.,	Oats.....	16 00

REPORT OF THE COMMISSIONERS OF

DECEMBER—Continued.**TO PAY VOUCHER.**

<i>Date.</i>	<i>No.</i>	<i>Of For</i>	<i>Amount.</i>
24	9482	Erie Machine Shop, Engine Repairs.....	\$ 16 15
	9483	Wm. Densmore & Co., Oats.....	17 00
	9484	Erie Sand & Gravel Co., Sand and Gravel.....	17 50
	9485	O. C. Thayer & Son, Cement and Pipe.....	20 81
	9486	Constable Bros., Labor and Material on Buildings.....	25 25
	9487	Globe Iron Foundry Co. Castings.....	26 00
	9488	South Erie Iron Works, Castings.....	26 64
	9489	The W. L. Scott Company, Coal.....	31 01
	9490	Erie Machine Shop, Tools.....	31 08
	9491	Union Ice Company, Ice.....	36 20
	9492	J. M. Dunn, Brick.....	37 80
	9493	Constable Bros., Labor and Material on Buildings.....	37 81
	9494	E. J. Riblet, Shop Rent.....	40 00
	9495	Mutual Telephone Company, Telephone Rental.....	42 00
	9496	Manning, Maxwell & Moore, Harrington Hoist.....	45 00
	9497	Jas. McCrea & Co., Steam Joint Clamps.....	45 00
	9498	South Erie Iron Works, Castings.....	53 43
	9499	Lyman Felheim, Lumber.....	60 93
	9500	O. C. Thayer & Son, Cement, Clay, Pipe,.....	65 43
	9501	J. M. Dunn, Brick.....	69 30
	9502	Erie Oil Works, Oil.....	82 49
	9503	Globe Iron Foundry Co., Castings.....	95 20
	9504	Erie Mfg. & Supply Co., Boiler Compound, Valves, Packing, etc.....	117 49
	9505	Erie Mfg. & Supply Co., Tools, Valves, Waste, etc.....	127 86
	9506	Jones & Laughlin, Limited, Iron Beams and Channels.....	131 64
	9507	Ashby & Vincent, Books and Stationery.....	133 05
	9508	Lake Shore Foundry, Pipe.....	824 93

DECEMBER--Continued.**TO PAY VOUCHER.**

<i>Date.</i>	<i>No.</i>	<i>Of For</i>	<i>Amount.</i>
	9509	Geo. C. Gensheimer, Ass't Secy , Sundries.....	20 01
	9510	H. F. Watson Company, Tar, Felt and Paste.....	47 49
31	9511	Pay Roll—Street Work, Disbursed by M. L. Whitley, Clerk.....	188 14
	9512	F. A. Mizener, Coal.....	165 50
	9513	Jarecki Manufacturing Co., Repairing Tools and Valves.....	5 55
	9514	Hays Manufacturing Co., Fittings.....	31 31
	9515	Jarecki Manufacturing Co., Fittings.....	86 95
	9516	Hays Manufacturing Co., Fittings.....	194 38
Total.....			\$23,713 58

RECAPITULATION, 1898.

Number Vouchers Issued.	MONTH.	AMOUNTS.
30	January.....	\$ 13,342 21
58	February.....	15,063 75
39	March.....	2,604 02
60	April....	9 344 76
53	May.....	4,966 27
61	June.....	12,255 42
73	July	18,363 20
60	August.....	9,889 89
47	September.....	11,328 36
60	October	9,828 57
16	November	2,254 86
100	December	23,713 58
657	Total.....	\$132,954 89

RESERVOIR.

Extract from Report of J. W. Wright, M. D., Health Officer of the City of Erie, for the Year 1897.

The use of Mill Creek and other streams as sewers and the discharge of sewage through them into the bay is most deplorable and immediate steps should be taken toward the building of an intercepting sewer and the establishment of a sewage disposal plant where all the sewage of the city could be received and go through a complete process of purification. The cities of Reading, Pa., and Lawrence, Mass., are notable examples of what can be accomplished in the way of obtaining pure water from sewage, bacteriological examination of water obtained after passing through the filter beds showing it to be practically free from all forms of bacteria and perfectly safe for drinking purposes.

The use of Mill Creek as an open sewer cannot be too strongly condemned. Nevertheless, if its use for such purposes is continued, the bottom of the stream should be paved with brick. This would be a step toward its complete enclosure, an event which must surely follow its future use as a public sewer. Paving the bottom of the stream with brick would give a smooth surface for the water to run over, instead of a rough, uneven bottom, full of depressions in which filth accumulates to the detriment of the neighboring property and to the health of the people living in its vicinity.

Death rate of the City of Erie for the 23 years from 1876 to 1898, inclusive, with a tabulated statement of deaths from the principal contagious and infectious diseases during that period:

Year.	Tuber- culosis.	Typhoid	Diph- theria.	Scarla- tina.	Small- pox.	Total Number Deaths.	Rate per 1,000.
1876.....	44	14	6	2	.....	355	14.27
1877.....	52	10	4	2	.....	346	13.90
1878.....	60	6	9	10	.....	375	14.57
1879.....	49	8	10	8	.....	405	15.11
1880.....	55	6	46	11	.....	490	18.02
1881.....	60	17	56	2	.....	549	18.97
1882.....	52	21	53	.....	13	499	16.63
1883.....	41	8	13	10	.....	440	14.10
1884.....	58	10	36	12	.....	496	15.33
1885.....	65	15	10	3	.....	459	13.70
1886.....	53	12	6	48	.....	569	16.42
1887.....	59	10	11	24	.....	616	17.18
1888.....	58	9	12	3	.....	584	15.63
1889.....	57	16	14	3	.....	599	15.41
1890.....	91	26	13	10	.....	732	18.01
1891.....	66	24	25	14	.....	769	18.31
1892.....	83	24	224	2	.....	903	20.00
1893.....	51	15	95	7	.....	815	17.10
1894.....	50	15	58	60	.....	834	16.70
1895.....	59	20	23	12	.....	821	15.88
1896.....	64	19	10	2	.....	609	10.87
1897.....	68	12	4	2	.....	624	10.94
1898.....	57	7	14	3	.....	611	10.53

DISBURSEMENTS.

DEPARTMENT	ACCOUNT.	FOR THE YEAR 1898			From Beginning of Works to December 31, 1898.
		Labor.	Material.	Total.	
Construction.	Adtg., Books, Stationery and Printing	<i>a</i> \$ 143 26	\$ 31 14	\$ 174 40	\$ 644 75
	Boilers.....	<i>a</i> .....	.....	.....	3,364 13
	Boiler No. 7.....	<i>g</i> 127 51	1,171 31	1,298 82	2,324 84
	" " 8.....	<i>g</i> 127 52	1,171 42	1,298 94	2,324 97
	" " 9.....	<i>g</i> 127 51	1,171 33	1,298 84	2,324 88
	" " 10.....	<i>g</i> 127 51	1,171 45	1,298 96	2,325 00
	" " 11.....	<i>g</i> 131 54	1,171 38	1,302 92	2,302 43
	" " 12.....	<i>g</i> 131 54	1,171 47	1,303 01	2,302 54
	" " 13.....	<i>g</i> 131 98	1,171 39	1,303 37	2,302 86
	" " 14.....	<i>g</i> 142 90	1,171 41	1,314 31	2,313 82
	Boiler House No. 2.....	<i>g</i> 75 14	2,263 68	2,338 82	15,826 24
	Buildings and Grounds.....	1,529 15	902 09	2,431 24	90,181 80
	Civil Engineering.....	.....	.....	.....	8,554 80
	Connections.....	1,719 00	1,081 22	2,800 22	119,169 35
	Drinking Fountains.....	<i>d</i>.....	.....	.....	1,577 08
	Electric Light Plant	<i>a</i>.....	.....	.....	756 67
	Engines and Boilers to January 1, 1891 .....	.....	.....	.....	93,336 61
	Engines.....	<i>a</i>.....	.....	.....	15 05
	Engine No. 4.....	<i>b</i>.....	.....	.....	48,353 18
	" " 5.....	<i>h</i> 1,242 23	394 92	1,637 15	1,637 15
	Engine House No. 3.....	<i>b</i>.....	.....	.....	21,401 94
	Engine Room Furniture and Fixtures.....	.....	.....	.....	1,525 55
	Expense.....	<i>a</i> 3 79	122 90	126 69	396 63
	Fire Hydrants	12 42	12 80	25 22	27 610 13
	Fuel.	96 49	932 45	1,028 94	238 26
		<i>a</i> 1 06	34 27	35 33	

Construction.	Gas Well .....	.....	.....	.....	.....	8,148 59
	High Service System.....	<i>h</i>	8,470 46	6,744 43	15,214 89	15,214 89
	Horse, Wagon and Cartage.....		61 35	199 86	261 21	4,943 73
	Intake Pipe No. 1					49,474 39
	" " 2	<i>h</i>				140,966 25
	Interest and Discount					99,420 95
	Light, Oil, Lamps, Wicks, etc.....	<i>a</i>	96	30 98	31 94	240 64
	Lowering Mains.....		164 32		164 32	1,753 17
	Mains and Branches.....		7,573 30	8,550 64	16,123 94	555,393 81
	Main, 30-inch					75,955 61
	Meters		140 96	959 51	1,100 47	19,919 51
	New Electric Light Plant.	<i>h</i>	565 31	3,595 60	4,160 91	4,160 91
	Office Furniture and Fixtures.....	<i>a</i>	16 18	524 05	540 23	1,614 26
	Oil and Tallow.....	<i>b</i>	19	6 04	6 23	22 19
	Paving and Street Repairs.....	<i>b</i>				4 07
	Park Fountains.					3 244 68
	Railroad Switch and Scales.....					2,918 92
	Reservoir.....					123,150 83
	Shop Rent.....	<i>a</i>	3 73	120 97	124 70	913 46
	Steel Plate Chimney No. 1.....	<i>g</i>	28 85	934 59	963 44	4,177 53
	Stop Valves.....		297 48	1,484 81	1,782 29	36,305 84
	Superintendent's Expense.....	<i>a</i>				52 82
	" Stores.....					217 05
	Telephone and Telegraph	<i>a</i>				18 32
Maintenance.	Tools and Repairs... ..		378 64	130 18	508 82	5,477 93
	Waste and Packing.....	<i>g</i>				5 20
	Water Lots.....	<i>e</i>	50	16 13	16 63	15,851 29
	Adtg., Books, Stationery and Printing	<i>a</i>	143 10	25 96	169 06	493 72
	Boilers to January 1, 1893					18,365 28
	Boiler No. 1.....	<i>c</i>	64 36	1 11	65 47	1,099 21
	" " 2.....	<i>c</i>	64 35	1 13	65 48	1,039 43
	" " 3.....	<i>c</i>	64 35	1 11	65 46	1,433 16
	" " 4.....	<i>c</i>	64 33	1 13	65 46	1,146 55
<hr/>						
<i>a</i> Accounts opened in 1891.			<i>c</i> Accounts opened in 1893.	<i>e</i> Accounts opened in 1895.	<i>h</i> Accounts opened in 1898	
<i>b</i> Accounts opened in 1892			<i>d</i> Accounts opened in 1894.	<i>g</i> Accounts opened in 1897.		

DISBURSEMENTS—Continued.

DEPARTMENT.	ACCOUNT.	FOR THE YEAR 1898.			From Beginning of Worksto December 31, 1898.
		Labor.	Material.	Total.	
Maintenance.	Boiler No. 5.....	\$ 71 19	\$ 12 68	\$ 83 87	\$ 791 27
	" 6.....	71 18	12 70	83 88	626 18
	" 7.....	49 11	47 97	97 08	97 08
	" 8.....	58 63	50 35	108 98	108 98
	" 9.....	48 43	47 80	96 23	96 23
	" 10.....	38 17	48 08	86 25	86 25
	" 11.....	35 35	48 14	83 49	83 49
	" 12.....	47 71	48 36	96 07	96 07
	" 13.....	23 88	48 39	72 27	72 27
	" 14.....	28 65	49 12	77 77	77 77
	Boiler House No. 1.....	852 51	1,654 39	2,506 90	3,045 07
	" 2.....	54 85	131 31	186 16	186 16
	Buildings and Grounds.....	872 60	363 71	1,236 31	8,988 09
	Connections.....	781 84	117 24	899 08	12 191 36
	Drinking Fountains.....	5 97	41 13	47 10	192 31
	Electric Light Plant.....	8 59	278 20	286 79	602 64
	Engines to January 1, 1893.....				13,402 04
	Engine No. 1.....				115 53
	" 2.....	6 45	31 98	38 43	441 03
	" 3.....	79 83	160 35	240 18	890 97
	" 4.....	152 73	721 77	874 50	2,820 44
	Engine House No. 1.....	124 10	260 68	348 78	1,406 45
	" 2.....	1,297 64	1,594 53	2,892 17	4,214 42
	" 3.....	100 01	380 34	480 35	1,358 89

Maintenance.

Engine Room Furniture and Fixtures..	a	3 12	101 20	104 32	295 28
Engineer's Stores	b				1 05
Expense	a	12 06	76	12 82	361 88
Fire Hydrants	a	285 82	33 53	319 35	2,773 41
Fuel.....	a		32 01	33 00	193 02
Horse, Wagon and Cartage	a	63 08	258 56	321 64	5,017 40
Intake Pipe No. 1.....	a				146 11
Light, Oil, Lamps, Wicks, etc.....	a	43	13 99	14 42	142 49
Mains and Branches.....	a	299 61	276 33	575 94	20,936 46
Main, 30-inch.....	a	9 89		9 89	909 22
Meters	a	99 31	151 45	250 76	5,639 19
New Electric Light Plant	b	35 11	77 72	112 83	112 83
Office Furniture and Fixtures.....	a	27 74	126 36	154 10	534 54
Oil and Tallow.....	b				20 92
Paving and Street Repairs.....	a				449 94
Railroad Switch and Scales..	a	177 98	115 04	293 02	992 61
Reservoir.....	a	146 84	23 78	170 62	35,193 26
Shop Rent	a	3 73	120 97	124 70	913 22
Stand Pipe.....	c	24 67	311 33	336 00	4,161 10
Steel Plate Chimney No. 1.....	b	04	1 31	1 35	1 35
Stop Valves.....	a	163 02	52 72	215 74	5,595 64
Superintendent's Expense.....	a				52 56
" Stores.....					396 52
Tools and Repairs.....	b	416 56	943 29	1,359 85	7,009 56
Waste and Packing	a				41 33
Adtg., Books, Stationery and Printing.....	b	148 35	173 31	321 66	1 497 30
Buildings and Grounds.....	b	1,711 25		1,711 25	8,378 14
Drinking Fountains.....	g	123 70		123 70	175 07
Electric Light.....	h	1 58	51 04	52 62	52 62
Electric Light Plant.....	b	01	15	16	34 84

a Accounts opened in 1891.
b Accounts opened in 1892.

c Accounts opened in 1893.
d Accounts opened in 1894.

g Accounts opened in 1897.
h Accounts opened in 1898.

Operating.

DISBURSEMENTS—Continued.

DEPARTMENT.	ACCOUNT.	FOR THE YEAR 1898.			From Beginning of Works to December 31, 1898.
		Labor.	Material.	Total.	
Operating.	Engineers and Firemen.....	\$6,807 92	.....	\$6,807 92	\$137,386 19
	Engineer's Stores.....	.....	.....	.....	2,348 57
	Expense.....	<i>a</i> 88	\$ 28 48	29 36	1,089 61
	Fire Hydrants.....	<i>b</i> 416 40	.....	416 40	1,015 65
	Flushing Sewers.....	<i>g</i> 21 06	.....	21 06	30 67
	Fuel.....	152 82	4,949 55	5,102 37	168,444 97
	Horse, Wagon and Cartage.	<i>d</i> .....	.....	.....	54 81
	Inspectors	<i>c</i> 2,483 68	.....	2,483 68	14,357 02
	Insurance.....	78	25 20	25 98	1,554 01
	Light, Oil, Lamps, Wicks, etc.....	<i>a</i> 85	27 67	28 52	442 88
	Meters.....	<i>b</i> 340 66	.....	340 66	3 549 21
	Oil and Tallow.....	26 35	853 49	879 84	14,947 37
	Rent of Office.....	<i>b</i> .....	.....	.....	603 09
	Reservoir.....	<i>b</i> 494 82	.....	494 82	3,293 07
	Stop Valves.....	<i>e</i> 40 91	.....	40 91	399 63
	Taxes—U. S., State, County and School.....	8 87	287 30	296 17	2,414 58
	Telephone and Telegraph	<i>a</i> 7 56	244 97	252 53	1,476 18
	Tools and Repairs	<i>i</i> 6 28	203 55	209 83	856 31
	Turning on and off Water	<i>g</i> 374 32	.....	374 32	639 42
	Waste and Packing.....	31 03	1,005 02	1,036 05	7,295 50
	Water Rent Returned.....	47	15 06	15 53	1,093 18

Accounting.	Advtg., Books, Stationery and Printing.....	17 30	560 47	577 77	10,356 89
	Expense.....	3 14	5 63	8 77	14,817 40
	Horse, Wagon and Cartage.....	<i>b</i>			17 30
	Postage.....	13 06	422 99	436 05	6,681 79
Sundries.	Salaries.....	7,442 92		7,442 92	190,888 30
	City of Erie, Board of Com. of the Sinking Fund.....		25,000 00	25,000 00	145,500 00
	City of Erie, Penna.....	<i>a</i>	6 92	6 92	19 23
	Court Costs.....				478 40
Legal.	Counsel Fees.....	600 00		600 00	4,093 53
	Expense.....	<i>a</i>			189 02
	Totals.....	\$51,829 66	\$81,125 23	\$132,954 89	\$2,536,608 48

a Accounts opened in 1891.
b Accounts opened in 1892.

c Accounts opened in 1893.
d Accounts opened in 1894.

e Accounts opened in 1895.
g Accounts opened in 1897.

RECAPITULATION.

DEPARTMENT.	FOR THE YEAR 1898.				From Beginning of Works to Dec. 31, 1898.
	Pro-Rata.	Labor.	Material.	Total.	
Construction.....	.4664529†	\$23,572 78	\$38,444 42	\$62,017 20	\$1,622,677 50
Maintenance.....	.1188366†	6,979 91	8 820 01	15,799 92	167,459 23
Operating.....	.1584397†	13,200 55	7,864 79	21,065 34	373,429 89
Accounting..	.0636720†	7 476 42	989 09	8,465 51	222,761 68
Sundries.....	.1880857†	.....	25,006 92	25,006 92	145,519 23
Legal.....	.0045128†	600 00	.....	600 00	4,760 95
Totals.....	.9999997†	\$51,829 66	\$81,125 23	\$132,954 89	\$2,536,608 48

Amount of Coal Consumed in Pumping, Gallons of Water Pumped, Average Height Pumped, Cost per Million Gallons, Etc., from First Year Works were Operated to Dec. 31, 1898.

YEAR.	Tons Coal Consumed.	Cost Coal from Jan. 1st to Dec. 31st.	Grades of Bituminous Coal.	Gallons of Water Pumped.	Increase or Decrease	Number of places supplied.	No. of Fire Hydrants.	Average height of Water in Reservoir above surface of Bay.	Cost Coal per million gallons raised to Reservoir.	Gallons raised to Reservoir by one pound of Coal.
1868.....	591 1	\$ 309 61	Lump							
1869.....	544 4	4,818 48	"							
1870.....	1,064 5	5,159 10	"	246,648,960		1,218	97	232 0	\$18 76	98 5
1871.....	1,422 7	7,117 00	"	279,368,495	32,719,535 i	1,727	99	232 0	16 52	150 9
1872.....	1,308 5	6,528 50	"	395,076,000	115,707,505 i	2,140	103	232 0	21 90	114 8
1873.....	1,672 5	8,412 65	"	384,062,415	11,013,585 d	2,475	107	232 0	17 38	126 4
1874.....	1,759 0	7,709 54	"	444,817,395	60,754,980 i	2,663	107	232 0	16 30	145 5
1875.....	1,836 4	8,657 61	"	531,005,475	86,188,080 i	2,700	110	232 0	13 30	159 3
1876.....	1,105 1	8,925 22	"	670,726,650	139,721,175 i	2,763	112	232 0	12 75	135 7
1877.....	2,456 6	8,509 33	"	660,981,810	9,744,840 d	2,854	114	232 0	11 64	136 4
1878.....	2,463 3	7,945 37	"	682,392,315	21,410,505 i	2,915	115	232 0	9 19	153 6
1879.....	2,628 1	7,428 92	"	807,800,400	125,408,085 i	3,011	121	232 0	8 99	126 0
1880.....	3,076 1	6,978 41	Slack.	775,805,250	31,995,150 d	3,568	126	232 0	6 68	142 2
1881.....	3,430 3	6,517 58	"	975,640,934	219,835,684 i	4,110	161	232 0	6 45	139 7
1882.....	2,968 2	5,355 93	"	829,759,260	145,881,674 d	4,687	171	234 0	4 66	170 0
1883.....	2,398 2	3,908 59	"	815,939,685	13,819,575 d	5,077	197	234 7	4 99	152 4
1884.....	3,010 8	4,502 61	"	917,781,350	101,841,665 i	5,395	248	234 3	4 40	159 7
1885.....	3,243 8	4,575 79	"	1,036,496,665	118,715,315 i	5,658	270	232 9	3 86	165 8
1886.....	3,369 0	4,318 64	"	1,117,389,075	80,892,410 i	6,140	280	233 3	2 95	216 0
1887.....	2,820 4	3,589 31	"	1,218,213,688	100,824,613 i	6,368	318	234 1	1 89	292 1
1888.....	2,392 3	2,545 46	"	1,341,708,002	123,494,314 i	6,600	333	234 6	1 80	301 5
1889.....	2,446 0	2,661 12	"	1,475,358,220	133,650,218 i	7,086	346	235 2	1 81	322 4
1890.....	2,583 6	3,052 89	"	1,659,625,551	184,267,331 i	7,728	372	236 9	2 18	291 42
1891.....	3,120 7	3,941 53	"	1,807,038,580	147,413,029 i	8,255	393	237 3	2 35	279 43
1892.....	3,658 0	4,807 11	"	2,047,993,505	240,954,925 i	8,998	415	237 4	2 66	248 6
1893.....	4,693 5	6,218 95	"	2,333,638,610	285,645,105 i	9,687	444	236 5	2 43	306 8
1894.....	2,960 0	4,423 59	"	1,816,596,518	517,042,092 d	10,680	479	236 6	2 21	278 62
1895.....	3,541 5	4,377 16	"	1,975,396,305	158,797,787 i	.....	489	237 2	1 796	328 17
1896.....	3,056 0	3,603 28	"	2,005,757,728	30,361,423 i	10,846	514	227 6	2 034	331 75
1897.....	3,338 2	4,507 52	Miscel's.	2,215,416,770	209,659,042 i	11,385	523	235 9	1 68	363 98
1898.....	3,119 0	3,815 68	Slack.	2,270,520,528	55,103,758 i	11,739	543	235 6		

See pumping statistics.

BALANCE SHEET—INDIVIDUAL LEDGERS.
ASSESSSED ACCOUNTS.

1898.

1899.

Ward.	Balance from Dec. 31, 1897	Assessments.	Additions.	Penalties.	Balance to Jan. 1, 1899.	Total.	Balance from Dec. 31, 1897.	Deductions.	Cash.	Balance to Jan. 1, 1899.
First.....	\$ 95 32	\$14,399 36	\$ 760 79	\$ 70 56	\$ 36 80	\$15,362 83	\$ 43 34	\$1,473 75	\$13,771 73	\$ 74 01
Second....	101 06	22,053 08	1,133 93	83 61	65 10	23,426 78	62 64	1,139 18	22,177 32	57 64
Third.....	65 94	24,485 78	1,292 94	83 67	77 74	26,006 07	75 25	1,436 19	24,442 91	51 72
Fourth....	183 46	19,938 32	840 82	77 23	50 33	21,090 16	55 39	1,857 95	19,014 32	162 50
Fifth.....	60 53	9,356 34	544 26	50 31	26 00	10,037 44	26 91	514 30	9,445 77	50 46
Sixth....	65 99	11,166 08	620 79	49 26	19 58	11,921 70	17 73	495 39	11,359 26	49 32
Seventh..	7 86	688 98	114 14	2 04	1 04	814 06	12	123 51	682 94	7 49
Total....	\$580 16	\$102,087 94	\$5,307 67	\$416 68	\$276 59	\$108,669 04	\$281 38	\$7,040 27	\$100,894 25	\$453 14

METER ACCOUNTS.

First.....	\$ 958 36	\$ 3,552 29	.....	\$ 19	.....	\$ 4,510 84	.....	\$ 7 56	\$ 3,657 34	\$ 845 94
Second....	4,037 16	13,558 94	\$ 75 97	7 86	\$ 2 82	17,682 75	.....	24 20	13,788 02	3,870 53
Third.....	1,029 87	5,044 85	32 56	15 01	.....	6,122 29	.....	18 18	4,803 36	1,300 75
Fourth....	325 27	1,366 00	4 00	.....	.....	1,695 27	.....	87	1,403 13	291 27
Fifth.....	786 25	4,866 52	13	6 35	.....	5,659 25	.....	.....	4,490 11	1,169 14
Sixth.....	269 31	1,091 60	14 05	1 38	.....	1,376 34	.....	2 15	1,171 70	202 49
Seventh..	91 17	400 99	.....	36	.....	492 52	.....	.....	383 31	109 21
Total....	\$7,497 39	\$29,881 19	\$126 71	\$31 15	\$ 2 82	\$37,539 26	.....	\$52 96	\$29,696 97	\$7,789 33

SPECIAL PERMITS.

First.....	.....	\$ 22 50	.....	.....	.....	\$ 22 50	.....	.....	\$ 22 50	.....
Second....	.....	25 50	.....	.....	.....	25 50	.....	.....	25 50	.....
Third.....	.....	24 90	.....	.....	.....	24 90	.....	.....	24 90	.....
Fourth....	.....	12 31	.....	.....	.....	12 31	.....	.....	12 31	.....
Fifth.....	.....	40 47	.....	.....	.....	40 47	.....	.....	40 47	.....
Sixth.....	.....	6 25	.....	.....	.....	6 25	.....	.....	6 25	.....
Seventh..	.....	10 00	.....	.....	.....	10 00	.....	.....	10 00	.....
Total....	.....	\$141 93	.....	.....	.....	\$141 93	.....	.....	\$141 93	.....

CITY OF ERIE, PENNA.—DR.

CASH—Paid Board of Commissioners of the Sinking Fund of the City of Erie.....

25,000 00

INTEREST—(On balances in Second National Bank,

from October 1, 1897, to April 1, 1898,

126 80

Interest on same to December 31, 1898.....

3 82

130 62

From April 1, 1898, to October 1, 1898.....

136 47

Interest on same to December 31, 1898.....

1 38

137 85

268 47

On payments to Board of Commissioners of the Sinking Fund of the City of Erie,

July 1, 1898, to December 31, 1898.....on

5,000 00

September 3, 1898, to December 31, 1898..on

5,000 00

December 17, 1898, to December 31, 1898..on

15,000 00

24 66

459 70

WATER—City Hall

Engine Houses.....

296 18

Fire Hydrants

202 25

Flushing Sewers & washing Mud off State St.

29,755 00

Fountains—Drinking.....

445 00

" —Park.....

157 50

1,251 05

1,408 55

Parks—Central—East.....

50 00

" —West.....

50 00

" —Lakeside—East.....

17 90

" —West.....

72 00

89 90

189 90

Sprinkling State St. bet. Front and Dock....

140 80

" Streets by Superintendent of Sts.

4 98

145 78

32,442 66

57,902 36

Balance.....

624,227 74

682,130 10

CREDITS.

BALANCE—December 31, 1897.....

654,740 48

INTEREST—On same to December 31, 1898.....

26,180 62

RENT—Of offices one year.....

1,200 00

682,130 10

Balance due the City of Erie, Penna., December 31, 1898.....

\$624,227 74.

WATER WORKS, IN THE CITY OF ERIE.

57

RESOURCES.

PLANT NORTH OF FRONT STREET—

Buildings and Grounds including Piers to Intake No. 1.	109,381 89	
Boiler House No. 2, from January 1, 1896.....	16,078 14	
Engine House No. 3, from January 1, 1892.....	21,591 35	147,051 38
Boilers from January 1, 1891.....	2,984 15	
Boilers Nos. 7 to 14 inclusive, from January 1, 1896.....	18,796 86	
Engines and Boilers to January 1, 1891.....	104,325 20	
Engine No. 4, from January 1, 1892.....	49,058 00	
Engine No. 5, from January 1, 1898.....	1,666 40	176,830 61
Electric Light Plant.....	766 90	
New Electric Light Plant, from January 1, 1898.....	4,241 71	5,008 61
Engine Room Furniture and Fixtures.....		1,678 35
Intake Pipes { No. 1,.....	55,568 44	
{ No. 2, from January 1, 1892.....	143,826 35	199,394 79
Railroad Switch and Scales.....		3,262 09
Steel Plate Chimney No. 1, from January 1, 1896.....		4,245 44
Water Lots, from January 1, 1895.....		16,012 59
		553,483 86

PLANT SOUTH OF FRONT STREET—

Connections.....	128,080 36	
Drinking Fountains from January 1, 1894.....	1,597 41	
	29,239 30	
	15,510 36	
Mains and Branches.....		
Main, 30-inch....., from January 1, 1898.....	603,634 01	
Meters.....	83,289 35	
Stop Valves.....	20,890 68	
Office Furniture and Fixtures.....	39,090 15	
Reservoir.....		921,331 62
		1,640 86
		137,629 35
		1,060,601 83
		1,614,085 69

PERSONAL ACCOUNTS—Assessed..

Meter.....	453 14
Plumbing.....	7,789 33

CASH in hands of Treasurer City of Erie.....

LIABILITIES:

ACCOUNTS—City of Erie, Penna.....	624,227 74
Credits on Assessed.....	276 59
Meters.....	2 82
Balance.....	279 41
	624,507 15
	997,994 70
	1,622,411 85

ASSESSMENT FOR 1899.

W A R D S .

58

REPORT OF THE COMMISSIONERS OF

TERMS ASSESSED.	FIRST.		SECOND.		THIRD.		FOURTH.		FIFTH.		SIXTH.		SEVENTH.		TOTALS.	
	No.	Amount.	No.	Amount.	No.	Amount.	No.	Amount.	No.	Amount.	No.	Amount.	No.	Amount.	No.	Amount.
Air Pumps.....	6	18 00	23	69 00	21	65 00	9	27 00	6	18 00	6	18 00	.....	.....	71	215 00
Bakeries.....	1	5 00	5	26 24	3	19 36	2	10 00	3	15 00	6	34 36	.....	.....	20	109 96
Banks.....	3	20 00	.....	.....	1	10 00	2	10 00	.....	.....	.....	.....	.....	.....	6	40 00
Barber Chairs.....	21	59 00	34	109 00	46	124 00	28	82 00	14	44 00	16	48 00	.....	.....	159	476 00
Bath Tubs.....	307	971 11	324	993 50	702	2098 33	582	1682 00	128	379 50	181	528 00	3	13 50	2227	6665 94
Bicycle Schools.....	1	5 00	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	1	5 00
Billiard Tables.....	8	8 00	3	3 00	22	24 00	6	6 00	.....	.....	3	3 00	.....	.....	42	44 00
Blacksmith Fires.....	4	17 50	9	37 50	12	47 50	6	25 00	4	20 00	1	5 00	.....	.....	36	152 50
Boat Houses.....	2	15 00	.....	.....	.....	.....	2	13 00	.....	.....	.....	.....	.....	.....	4	28 00
Bonds.....	6	33 48	6	41 07	6	18 97	3	2 18	10	31 90	12	31 78	4	65 98	47	225 36
Bottling Works.....	1	5 00	2	16 00	.....	.....	2	20 00	.....	.....	.....	.....	.....	.....	5	41 00
Bowling Alley.....	.....	.....	1	5 00	3	15 00	.....	.....	.....	.....	1	5 00	.....	.....	5	25 00
Churches & S'day Schools	3	9 00	10	42 00	11	55 00	7	35 00	1	5 00	4	20 00	.....	.....	36	166 00
City Parks.....	2	67 90	.....	.....	.....	.....	3	192 00	.....	.....	.....	.....	.....	.....	5	259 90
Club Rooms.....	3	9 00	14	52 00	11	37 00	10	38 00	2	8 00	4	14 00	.....	.....	44	158 00
Cows.....	12	9 00	11	8 25	14	10 50	6	4 50	27	19 75	10	7 50	3	3 38	83	62 88
Eating Houses.....	2	13 00	7	35 00	19	89 67	6	30 00	1	5 00	1	3 00	.....	.....	36	175 67
Engine Houses.....	1	5 00	1	5 00	1	10 00	1	5 00	1	5 00	2	10 00	.....	.....	7	40 00
Elevators.....	1	120 00	3	10 00	1	60 00	1	6 00	.....	.....	.....	.....	.....	.....	6	196 00
Engine Horse Power.....	105	148 63	131	197 69	100	143 50	72	59 37	47	56 70	43	76 00	30	49 50	528	731 39
Families.....	1374	6863 514	2427	12,181 67	1872	9360 00	1548	7740 00	1139	5691 663	1332	6646 663	47	352 50	9739	48786 02
Fish Markets.....	.....	.....	1	5 00	1	5 00	1	5 00	.....	.....	.....	.....	.....	.....	3	15 00
Fish Ponds.....	.....	.....	.....	.....	1	10 00	1	30 00	.....	.....	.....	.....	.....	.....	2	40 00
Fountains.....	1	625 52	.....	.....	2	8 00	13	700 53	.....	.....	.....	.....	.....	.....	16	1334 05
Fountains, Drinking.....	2	30 00	2	30 00	1	15 00	1	15 00	2	30 00	1	15 00	1	22 50	10	157 50
Fountain Cuspidors.....	.....	.....	2	6 00	1	3 00	.....	.....	.....	.....	.....	.....	.....	.....	3	9 00
Freight Houses.....	.....	.....	1	15 00	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	1	15 00
Glass Washers.....	.....	.....	.....	.....	.....	.....	1	24 00	.....	.....	.....	.....	.....	.....	1	24 00
Green Houses.....	.....	.....	.....	.....	.....	.....	4	10 35	17	23 17	2	90	3	4 95	26	39 37
Hand Basins.....	363	300 564	436	402 34	924	804 17	746	621 00	78	72 834	186	166 334	4	5 25	2737	2372 49
Heating Boilers, H. P.....	290	76 814	337	171 75	602	142 17	562	140 50	112	25 50	141	35 25	.....	.....	2044	591 984
Horses.....	159	224 00	300	400 00	411	571 00	319	397 00	210	302 00	240	333 00	8	19 50	1647	2246 50
Laundries.....	1	5 00	3	15 00	2	10 00	2	10 00	.....	.....	1	5 00	.....	.....	9	45 00

RATES FOR CITY WATER.

Approved by Select Council August 19, 1895. Approved by Common
Council September 16, 1895. Approved by the
Mayor September 21, 1895.

ARE ALL ANNUAL EXCEPT AS OTHERWISE INDICATED, AND PAYABLE
QUARTERLY IN ADVANCE.

Air Pump	\$	3 00
Bath Tub--Private (one family) first tub		3 00
Bath Tub--Private (one family) each additional tub.....		1 50
Bath Tub--Public, each tub.....		5 00
Bakery, per barrel of flour used (but no charge less than \$5)..		01
Barber Shop, first chair, including hand basin.....		4 00
Barber Shop, each additional chair, including hand basin.....		2 00
Billiard Tables, each		1 00
Blacksmith Fire, first fire.....		5 00
Blacksmith Fire, each additional fire.....		2 50
Boarding House, (in addition to family rates) per room.....		1 00
Building Purposes, per bushel of lime; to be paid before work is begun.....		02
Butcher Stalls.....	3 00 to 15 00	
Charitable Institutions, one-third annual rates.		
Cow.....		75
Condensing Boiler for Steam Heating, (per season of 6 months) per horse power.....		25
Eating Houses.....	5 00 to 25 00	
Family.....		5 00
Fire Protection Fixtures, testing same, thirty (30) minutes or less.....		3 00
Fire Protection Fixtures, testing same, one (1) hour or less, but more than thirty (30) minutes.....		5 00
Flushing Sewers, settling earth in ditches or purposes of like nature, per hour, or fractional part of an hour, each.....		5 00
Hand Basins in dwellings, hotels and schools, first basin.....		1 00
Hand Basins in dwellings, hotels and schools, each additional basin		50
Hand Basins in offices, stores and blocks, each		1 00
Hotels, (in addition to family rates)per room		1 00
Laundry, shop		5 00
Laundry, wash tub, stationary, each.....		2 00
Laundry, revolving washer, each.....		5 00
Livery Stable per horse.....		2 00
Offices.....	3 00 to 10 00	
Private Stable, one or two horses.....		2 00
Private Stable, each additional horse over two.....		1 00
Printing Offices.....	5 00 to 30 00	
Public Halls.....	5 00 to 25 00	
Saloons.....	5 00 to 25 00	
School, per pupil (in addition to fixtures).....		10
Slaughter Houses.....	5 00 to 50 00	
Sleeping Rooms, each.....		1 00

Sprinkling Streets or Lawns with Hose, PER SEASON :

Corner lot, 41 feet front or less	\$	5 00
Inside lot, 41 feet front or less.....		3 00
For each additional foot front to either corner, or in- side lot.....		05
Steam Engines, ten hours per day, each Horse Power.....		2 50
Stores.....	3 00 to	15 00
Urinal, private, self-closing. (one family).....		2 00
Urinal, private, not self-closing (one family).....		6 00
Urinal, public, self-closing.....		3 00
Urinal, public, not self closing.....		10 00
Urinal, private or public, continuous flow.....	10 00 to	30 00
Wash Tub, stationary, first tub (one family)		2 00
Wash Tub, stationary, each additional tub, (one family).....		1 00
Water Closet, pan or tank (one family) private		3 00
Water Closet, pan or tank (one family) each additional water closet.....		1 50
Water Closet, pan or tank, public, each		5 00
Water Closet, hopper, (one family) private, for each water closet		6 00
Water Closet, hopper, public, for each water closet.....		10 00
Work Shop, ordinary use.....	3 00 to	5 00

All other uses. when not metered, to be assessed by the Commissioners.

The sprinkling season is from May 1st to November 1st in each year.

There is no fractional part of a sprinkling season.

It will cost as much to sprinkle but once at any time during the sprinkling season as it will to sprinkle each day at the prescribed hours during the entire season.

Sprinkling must be confined to the hours between 5 and 8 A. M., 12 and 1 P. M., and 5 and 8 P. M., nor during said intervals more than one hour at a time. Persons who exceed one hour may be charged at fountain rates, or held liable for violation of the rules, at the option of the Commissioners.

Water fixtures will be assessed for each and every purpose available, and for each family or establishment within the enclosure or separated only by a door, gateway, or other means of easy communication.

No abatement of charges shall be allowed for vacancy of premises, except from the date that notice has been given at the office of the Commissioners of Water Works that they are unoccupied.

The Commissioners may limit or stop the supply of water in cases of emergency and shut it off for repairs or extensions, they being the judges of the time and necessity. Neither the Commissioners nor the City of Erie shall be liable in damages for any insufficient supply of city water.

For each and every violation of the rules and regulations of the Water Works, the offending party will be subject to a fine of not less than FIVE nor more than FIFTY DOLLARS.

Meter Rates.

Six (6) cents for each one thousand (1,000) gallons by meter measurement. *Provided* the minimum receipts per quarter shall be for a

$\frac{3}{4}$ -inch or less.....	\$	3 75
1-inch		4 50
1 $\frac{1}{2}$ -inch		6 25
2-inch		10 00
3-inch		18 75
4-inch		38 75



NEW BOILER HOUSE, AND SELF SUSTAINING STEEL PLATE CHIMNEY.

STATEMENT OF WORK DONE BY INSPECTOR No. 1, IN 1898.

MONTHS.	TURNED OFF ACCOUNT.			TURNED ON ACCOUNT.		NEW HOUSES.		FIXTURES.					Totals.	
	Unpaid.	Vacancies.	Leaks and Waste.	Paid.	Occupied.	Building Purposes.	Com-pleted.	Com-plaints.	Frozen.	Installed	Removed.	Leaks and Waste.		Vacancies.
January.....	.....	43	1	.....	35	11	15	2	4	75	55	2	.....	243
February.....	.....	23	3	.....	19	3	12	2	52	31	12	2	.....	159
March.....	.....	19	1	.....	84	5	35	1	1	202	18	1	387	754
April.....	.....	50	1	.....	72	6	39	3	1	234	20	3	.....	428
May... ..	.....	64	.....	3	44	11	34	3	.....	214	12	2	66	453
June.....	1	29	.....	1	53	10	43	3	.....	273	2	2	396	813
July.....	1	23	3	3	44	11	32	1	.....	155	.....	1	.....	275
August.....	.....	25	.....	.....	30	6	12	4	.....	56	7	1	.....	144
September .....	.....	31	.....	.....	47	6	30	1	.....	155	5	.....	180	455
October.....	.....	59	.....	.....	33	10	48	.....	.....	125	4	.....	.....	279
November.....	2	6	3	1	31	6	38	2	.....	100	13	1	.....	203
December.....	.....	5	.....	.....	11	3	13	2	.....	128	15	1	397	575
Totals.....	4	377	12	8	503	88	351	24	58	1,748	163	19	1,426	4,781

STATEMENT OF WORK DONE BY INSPECTOR No. 2, IN 1898.

MONTHS.	TURNED OFF ACCOUNT.			TURNED ON ACCOUNT.		NEW HOUSES.		FIXTURES.						Totals
	Unpaid.	Vacancies.	Leaks and Waste.	Paid.	Occupied.	Building Purposes.	Com-pleted.	Com-plants.	Frozen.	Installed.	Removed.	Leaks and Waste.	Vacancies.	
January .....	.....	.....	.....	.....	1	1	1	2	.....	1	.....	.....	.....	6
February	3	5	1	.....	14	1	4	.....	.....	10	4	.....	44	86
March	1	.....	.....	1	2	1	.....	.....	.....	.....	.....	.....	.....	5
April .....	.....	.....	.....	.....	1	.....	.....	.....	.....	.....	.....	.....	.....	1
May	6	.....	.....	.....	.....	.....	.....	.....	.....	14	.....	.....	.....	20
June .....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
July .....	.....	.....	.....	.....	2	.....	.....	.....	.....	.....	.....	.....	.....	.....
August	4	9	.....	1	22	9	1	.....	.....	25	11	.....	138	220
September .....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
October .....	.....	.....	.....	1	2	2	.....	2	.....	.....	.....	.....	.....	7
November	2	.....	.....	1	9	.....	.....	.....	.....	7	1	.....	.....	20
December .....	.....	.....	.....	.....	.....	.....	.....	.....	.....	9	1	.....	69	79
Total.....	16	14	1	4	53	14	6	4	.....	66	17	.....	251	446

STATEMENT OF WORK DONE BY INSPECTOR No. 3, IN 1898.

MONTHS.	TURNED OFF ACCOUNT.			TURNED ON ACCOUNT.		NEW HOUSES.		FIXTURES.						Totals.	
	Unpaid.	Vacancies.	Leaks and Waste.	Paid.	Occupied.	Building Purposes.	Com-pleted.	Com-plants.	Frozen.	Installed.	Removed.	Leaks and Waste.	Vacancies.		
January.....	.....	.....	1	.....	1	.....	.....	.....	.....	.....	.....	.....	.....	.....	19
February.....	2	.....	.....	1	1	.....	.....	.....	.....	24	1	.....	.....	.....	29
March.....	5	.....	.....	1	3	.....	2	.....	.....	2	.....	.....	.....	.....	13
April.....	.....	29	.....	.....	10	1	1	.....	.....	14	5	.....	.....	.....	60
May.....	5	16	.....	.....	6	1	.....	.....	.....	17	4	.....	.....	.....	49
June.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	4	.....	.....	.....	.....	4
July.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	1	.....	.....	.....	.....	1
August.....	3	1	.....	.....	2	.....	.....	.....	.....	14	.....	.....	.....	.....	20
September.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
October.....	1	.....	1	.....	.....	.....	3	.....	.....	9	1	.....	.....	.....	15
November.....	2	.....	.....	2	2	.....	1	.....	.....	21	.....	.....	.....	.....	28
December.....	.....	86	.....	.....	.....	.....	.....	.....	.....	7	1	.....	.....	.....	94
Total.....	18	132	2	4	25	2	7	.....	.....	130	12	.....	.....	.....	332

INTERIOR VIEW.—NKW BOILER HOUSE.

Statement of Work Done at Annual Inspection by Inspector No. 2 in 1898.

WARD.	NUMBER OF				NO. OF SPRINKLERS.				NUMBER OF		NUMBER OF WATER					NUMBER OF					TOTAL.
	Premises Inspected.	Draw Cocks.	Hydrants.	Goose Necks.	Curb.	Hydrant.	Lawn.	Sill Cocks.	Bath Tubs.	Wash Tubs.	Non-Closing Hopper.	Pan or Tank.	Urinals.	Hand Basins.	Air Pumps.	Heating Boilers.	Manufact'g Engines.				
First.....	1,321	1,476	198	9	71	38	48	354	307	92	59	700	38	363	6	11	6	5,097			
Second.....	2,119	2,539	295	4	52	38	61	425	324	46	33	1,045	70	436	23	20	13	7,543			
Fifth.....	1,060	1,224	110	5	19	25	52	204	128	15	19	264	11	78	6	13	3	3,236			
Seventh.....	35	29	3	.....	1	2	2	5	1	.....	.....	4	.....	2	.....	.....	.....	84
Total.....	4,535	5,268	606	18	143	103	163	988	760	153	111	2,013	119	879	35	44	22	15,960			

Statement of Work Done at Annual Inspection by Inspector No. 3 in 1898.

Third.....	1,858	2,446	199	11	105	52	105	669	702	243	81	1,695	89	924	21	41	18	9,259
Fourth.....	1,512	1,804	249	14	168	77	106	516	582	276	11	1,233	67	746	9	45	7	7,422
Sixth.....	1,230	1,394	151	7	29	52	106	401	181	49	23	408	26	186	6	6	5	4,260
Seventh.....	23	17	7	.....	4	.....	19	4	2	.....	.....	2	.....	2	.....	.....	.....	80
Total.....	4,623	5,661	606	32	306	181	336	1,590	1,467	568	115	3,338	182	1,858	36	92	30	21,021

PUMPING STATISTICS FOR 1898.

MONTH.	ENGINES.								Totals.	Daily Average.	Average Lift in Feet.	
	No. 1.		No. 2.		No. 3.		No. 4					
	Days Run.	Gallons.	Days Run.	Gallons.	Days Run.	Gallons.	Days Run.	Gallons.				
January.....	8	44,940,532	23	149,655,480	31	194,596,012	6,277,290	235.34
February.....	28	176,185,704	28	176,185,704	6,292,346	235.85
March.....	3	12,639,536	29	162,412,752	32	175,052,288	5,646,848	235.68
April.....	30	167,697,048	30	167,697,048	5,589,901	235.01
May.....	31	177,928,920	31	177,928,920	5,739,642	235.16
June.....	4	21,142,212	28	175,046,928	32	196,189,140	6,539,638	234.90
July.....	31	226,865,928	31	226,865,928	7,318,255	235.49
August.....	31	195,330,720	31	195,330,720	6,300,990	235.71
September.....	30	194,713,032	30	194,713,032	6,490,434	235.97
October.....	31	193,999,848	31	193,999,848	6,258,059	236.15
November.....	30	178,754,712	30	178,754,712	5,958,490	236.22
December.....	31	193,207,176	31	193,207,176	6,232,489	235.98
Total.....	15	78,722,280	353	2,191,798,248	368	2,270,520,528	6,220,604	235.62

PUMPING STATISTICS.

There are four pumping engines.

Nos. 1 and 2 are Cornish Bull Pumps, erected in 1868; alike in their dimensions, which are as follows: Steam Cylinders, 60 inches in diameter; Pump Plunger, $20\frac{3}{4}$ inches in diameter, each 10-foot stroke, capacity being 165 gallons per stroke, pumping 2 000,000 gallons daily. These pumps are out of commission, the cost for repairs being greater than they are worth.

No. 3 is a Gaskill Horizontal Compound Pumping Engine, erected in 1886, having two H. P. Cylinders 21 inches in diameter, two L. P. Cylinders 42 inches in diameter, two pumps $19\frac{1}{2}$ inches in diameter, all 36-inch stroke; capacity being 182 gallons per revolution, pumping 5,000,000 gallons daily.

No. 4 is a Worthington Horizontal Compound High Duty Pumping Engine, erected in 1893, having two H. P. Cylinders 33 inches in diameter, two L. P. Cylinders 66 inches in diameter, two pumps 29 inches in diameter, all $49\frac{3}{4}$ -inch stroke; capacity being 552 gallons per stroke, pumping 12,000,000 gallons per day, at a piston speed of 128 feet per minute, against a head of 260 feet.

There are two intakes, one constructed in 1868, of which 52 feet is brick 14 feet in diameter, 590 feet is wood $4\frac{1}{4}$ feet in diameter, and 333 feet is boiler iron 4 feet in diameter, making a total length of 975 feet. The top of the outer end of this intake is four feet below the zero level of the bay, and as it approaches the shore ascends till the top is only two feet above the zero level of the bay. *This intake has not been used since the new one was completed, and as the part made of wood has not been submerged for some time it is undoubtedly past use.* The second intake was completed in 1896. It is made of cast iron 60 inches internal diameter, 8 307.18 feet long, buried in the bottom of the bay; at no place is there less than three feet of earth over its top. The outer end terminates in an octagonal crib, 40 feet being its extreme width and 8 feet high, the top being 13 feet below the zero level of the bay. So far as we know, this is the longest single piece of submerged 60-inch cast iron pipe in the world.

The standpipe was erected in 1868. It is five feet in diameter and 259.65 feet in height. A spiral staircase surrounds it and all enclosed in brick. So far as we know, this is the tallest standpipe in the world.

The boiler house is 74 feet wide, 102 feet long, and 25 feet from floor line to bottom of cords to roof. On the north side eight horizontal tubular boilers are installed in batteries of two each. The boilers are 72 inches in diameter, 18 feet long, without domes, and contain eighty 4-inch lap welded tubes, capable of carrying 150 lbs. pressure to the square inch.

On the south side of the house can be erected an equal number of the same size boilers, but until these are required the room is used for storing coal; the bins now in place hold 800 tons of coal.

On the north side of the boiler house, near its east end, is a self-sustaining steel plate chimney, 175 feet high, 75 inches internal diameter, lined with fire-brick to a height of 80 feet.

The Reservoir is about two miles distance from the Pumping Station, the bottom of which is 210 feet above the zero level of the water in the bay, and when the water is carried to a depth of 27 feet, holds 32,952,934 gallons of water.

The regular employees at the Pumping Works are one chief engineer, two assistant engineers, four firemen, one assistant fireman, two laborers and one janitor. The chief engineer stands a watch of five hours, from 7 to 12 every forenoon; the assistants divide the remainder of each day equally between them. The chief engineer gives daily ten hours service; when not on watch, is employed in repairs, supervision, etc. In addition to standing their regular watch, the assistant engineers aid their superior officer in keeping the machinery in order. The firemen alternate monthly in care of and operating the electric light plant. The laborers take care of the grounds and do such other work as may be required of them. The janitor takes care of the buildings.

FIRE HYDRANTS PLACED IN 1898.

STREET.	LOCATION.	SIZE.	STYLE.	REMARKS.
Front.....	N. W. Corner Holland	6-inch	Matthews.....	.....
Fourth.....	S. W. Corner Sassafras.....	4-inch	"	In place of Pittsburgh taken out.....
Seventh.....	51 ² feet West of Wayne.	4-inch	" .....	.....
Twelfth.....	S. W. Corner Wayne.....	4-inch	"	Matthews Hyd't taken out N.W.c. 12th & Wayne
Fourteenth	Between French and Holland.....	6-inch	"	} On property of Lovell Manufacturing Co.....
"	Between French and Holland.....	6-inch	"	
"	242 ¹⁰ feet West of Holland	4-inch	" .....	.....
Fifteenth.....	N. W. Corner Reed.....	4-inch	"	Matthews Hydrant 216 ² ft. W. of Reed taken out.
Eighteenth	N. W. Corner Buffalo Road.....	4-inch	"	In place of Pittsburgh taken out.....
Nineteenth.....	579 ⁴ feet East of Wayne.....	4-inch	" .....	.....
Brown Avenue..	193 ² feet West of Cascade.....	4 inch	Old Matthews ..	.....
Twenty-second..	298 ⁴ feet West of Raspberry.....	4-inch	Bay State.....	.....
Twenty-third ...	205 ² feet West of Pennsylvania Ave...	4-inch	" .....	.....
Queen.....	386 ² feet East of East Avenue.....	4-inch	" .....	.....
East Avenue....	818 feet South of Fifteenth.....	4-inch	Matthews.....	.....
"	S. E. Corner Twenty-third.....	4-inch	"	In place of Pittsburgh taken out.....
Wallace.....	N. E. Corner Twenty-first.....	4-inch	" .....	.....
Parade.....	S. E. Corner Sixth.....	4-inch	"	In place of Bay State taken out.....
"	S. W. Corner Eleventh.....	6-inch	" .....	.....
"	S. W. Corner Tenth.....	6-inch	" .....	.....
"	N. W. Corner Ninth.....	6-inch	" .....	.....
"	S. W. Corner Seventh..	6-inch	" .....	.....
"	S. W. Corner Sixth	6-inch	" .....	.....
"	S. W. Corner Fifth.....	6 inch	" .....	.....
French.....	57 ² feet South of Sixth	6-inch	"	Bay State Hyd't taken out S.W.c.French & P.Row
Peach.....	N. E. Corner Twenty third.....	4-inch	"	In place of Bay State taken out.....
Walnut.....	S. E. Corner Third.....	4-inch	"	In place of West Jersey taken out.....
"	331 feet South of Twelfth.....	6-inch	"	In place of Matthews taken out.....
"	S. E. Corner Seventh.....	4-inch	" .....	.....
Raspberry.....	163 ⁴ feet South of Twenty-second.....	4-inch	Bay State.....	.....

**SUMMARY OF
FIRE HYDRANTS PLACED AND REMOVED IN 1898.**

	PLACED.	SIZE.	NUMBER.	
STYLE—				
Matthews.....		4-inch.	15	
Matthews.....		6-inch.	9	
Bay State.....		4-inch.	4	
			<hr/>	28
	REMOVED.			
STYLE—				
Matthews.....		4-inch.	3	
Pittsburgh.....		4-inch.	3	
Bay State.....		4-inch.	3	
West Jersey.....		4-inch.	1	
			<hr/>	10
				<hr/>
				18

Private Hydrants Placed.

STYLE—	SIZE.	NUMBER.	
Matthews... ..	6-inch.	2	
		<hr/>	2
Total increase			<hr/>
			20
Number in use December 31, 1897.....			523
Total in use December 31, 1898.....			<hr/>
			543

Main Pipe Laid in 1898.

LOCATION.	SIZES.					REMARKS.
	2-in.	4-in.	6-in.	12-in.	24-in.	
	Feet.	In.	Feet.	In.	Feet.	In.
Front St., cor. Holland.....	22	.....	.....	.....
Front St., from Sassafras westward.....	134	8	.....	.....	Hydrant Branch.
Front St., at Pumping Station	*113	98	52 3 *Blow-off for 24-inch main.
Front St., bet. Chestnut and Walnut.....	736	.....
Third St., from Parade westward.....	167	.....	.....	.....
Third St., cor. Parade.....	10	.....	.....	Hydrant Branch.
Fifth St., bet. East and Penn'a Ave.....	72	4	.....	.....
Fifth St., from German westward.....	126	.....	.....	.....
Seventh St., bet. Reed and Perry.....	341	9	.....	.....
Seventh St., bet. Reed and Wayne.....	9	6	.....	Hydrant Branch
Eighth St., bet. Sassafras and Myrtle.....	15	.....	.....	.....	.....
Ninth St., Intersection of Liberty.....	20	.....	.....	.....
Tenth St., bet. Cascade and Raspberry.....	134	.....	.....	.....
Twelfth St., cor. Wayne.....	37	.....	.....	Hydrant Branch.
Twelfth St., from Wayne to Parade.....	2764	6	.....
Fourteenth St., bet. French and Holland.....	88	5	.....	} Hydrant Br'ch N.W. cor. 12th & Wayne taken out 13 ft. 4-in. pipe
Fourteenth St., bet. French and Holland.....	299	.....	.....	†For Lovell Manufacturing Co.
Fourteenth St., bet. French and Holland.....	10	.....	.....	.....	Hydrant Branch.
Fifteenth St., cor. Reed.....	9	.....	.....	.....	Hydrant Branch.
Fifteenth St., bet. Ash and Reed.....	384	5	.....	} Hydrant Branch bet. Ash & Reed
Nineteenth St., from Chestnut eastward.....	30	.....	.....	taken out 7 ⁴ ft. 4-inch pipe.
Nineteenth St., Intersection of Cherry.....	36	.....	.....	In place of 30 ft. 6-in. taken out.
Nineteenth St., from Wayne eastward.....	599	4	.....	.....
Nineteenth St., bet. Chestnut and Walnut.....	721	4	.....
Nineteenth St., bet. Walnut and Cherry.....	723	10
Twentieth St., Intersection of Chestnut.....	14	6	.....	.....
Brown Ave., bet. Cascade and Raspberry..	15	.....	.....	.....	Hydrant Branch.
Twenty-first St., from Liberty westward.....	234	6	.....	.....
Twenty-first St., Intersection of Chestnut.....	24	.....	.....
Twenty-second St., bet. Plum and Cascade	352	6	.....	.....

Twenty-second St., bet. Cascade and Raspb'y.....	.....	.....	311	2	.....	.....	.....	Hydrant Branch.
Twenty-second St., from Raspberry westward.....	.....	.....	337	4	.....	.....	.....	.....
Twenty-second St., bet. Cherry and Poplar.....	.....	.....	132	.....	.....	.....	.....	.....
Twenty-second St., bet. Raspberry & Cranb'y.....	.....	7 6	.....	.....	.....	.....	.....	.....
Twenty-third St., bet. East and Penn'a Ave....	.....	.....	129	4	.....	.....	.....	.....
Twenty-fourth St., from East Ave. westward.....	.....	.....	232	10	.....	.....	.....	.....
Twenty-fifth St., from Brandes westward.....	.....	.....	42	6	.....	.....	.....	.....
Twenty-sixth St., from Ash westward.....	.....	.....	112	.....	.....	.....	.....	.....
Twenty-sixth St., from Chestnut westward.....	.....	.....	872	.....	.....	.....	.....	.....
East Ave., bet. Fifteenth and Sixteenth.....	.....	13 10	.....	.....	.....	.....	.....	Hydrant Branch.
Wayne St., from Fourteenth southward.....	.....	.....	124	.....	.....	.....	.....	.....
Wayne St., from Eighteenth southward.....	.....	.....	440	.....	.....	.....	.....	.....
Wallace St., bet. Fourth and Fifth.....	.....	.....	60	.....	.....	.....	.....	.....
Wallace St., cor. Twenty-first.....	.....	.....	10	.....	.....	.....	.....	Hydrant Branch.
Parade St., bet. Second and Fourth.....	.....	.....	462	.....	.....	.....	.....	.....
Parade St., cor. Fourth.....	.....	.....	6	.....	.....	.....	.....	Hydrant Branch.
Parade St., cor. Eleventh.....	.....	.....	10	10	.....	.....	.....	Hydrant Branch.
Parade St., cor. Tenth.....	.....	.....	10	11	.....	.....	.....	Hydrant Branch.
Parade St., cor. Ninth.....	.....	.....	10	11	.....	.....	.....	Hydrant Branch.
Parade St., cor. Eighth.....	.....	.....	10	11	.....	.....	.....	Hydrant Branch.
Parade St., cor. Seventh.....	.....	.....	10	10	.....	.....	.....	Hydrant Branch.
Parade St., cor. Sixth.....	.....	.....	10	8	.....	.....	.....	Hydrant Branch.
Parade St., from Twelfth to Fifth.....	.....	.....	.....	2814 7	.....	.....	.....	.....
German St., from Fifth southward.....	.....	.....	171	6	.....	.....	.....	{ Hydrant Branch.
French St., bet. Sixth and South Park Row.....	.....	.....	45	.....	.....	.....	.....	{ Hydr. Br'c'h cor. French & Park
Myrtle St., from Twenty-second southward.....	.....	.....	212	.....	.....	.....	.....	{ removed 27 ft. 6-inch pipe.
Chestnut St., bet. Twenty-sixth & Twenty-sev'th	.....	.....	72	6	.....	.....	.....	{ 32 ft. 6-in. taken out at intersec-
Chestnut St., from Nineteenth to Twenty-first..	.....	.....	.....	643 1	.....	.....	.....	{ tion of 26th & Chestnut.
Walnut St., cor. Thirteenth.....	.....	.....	10	5	.....	.....	.....	{ Hydrant Branch.
Walnut St., cor. Seventh.....	.....	.....	.....	.....	.....	.....	.....	{ In place of 4-in. Hydrant Branch
Walnut St., cor. Nineteenth.....	12	.....	.....	.....	.....	.....	.....	{ 10 ⁵ ft. taken out.
Walnut St., bet. Thirteenth and Huron.....	.....	.....	643	.....	.....	.....	.....	Hydrant Branch.
Walnut St., from Front to Nineteenth.....	.....	.....	.....	.....	.....	.....	6629 3	Blow-off for 24-inch pipe.
Poplar St., from Eighth southward.....	.....	.....	108	.....	.....	.....	.....	.....

‡ Private pipe for Lovell Manufacturing Co.

Main Pipe Laid in 1898—Continued.

LOCATION.	SIZES.								REMARKS.
	2 in.	4 in.	6 in.	12 in.	24 in.	30 in.			
	Feet.	In.	Feet.	In.	Feet.	In.	Feet.	In.	
Poplar St., bet. Fourth and Fifth..	.....	.....	48	6	.....	.....	.....	.....
Liberty St., in	.....	.....	349	4	.....	.....	.....	.....
Plum St., bet.	.....	.....	37	3	.....	.....	.....	.....
Raspberry St.,	.....	8	.....	.....	.....	.....	.....	.....	Hydrant Branch.
..... 7-thd	.....	.....	.....	.....	.....	.....	.....	.....
..... urd..	.....	.....	435	.....	.....	.....	.....	.....
Penn'a Ave., from Columbus northward.....	70	.....	.....	.....	.....	.....	.....	.....
Chestnut Lane, from Pine Ave. westward.....	.....	.....	199	.....	.....	.....	.....	.....
Brandes St., bet. Twenty-fifth & Twenty-sixth..	.....	.....	204	6	.....	.....	.....	.....
Columbus St., bet. Brandes and Penn'a Ave.....	.....	.....	261	.....	.....	.....	.....	.....
Columbus St., bet. Brandes and Penn'a Ave..	265	8	.....	.....	.....	.....	.....	.....
Queen St., bet. East Ave. and Penn'a Ave.....	.....	6	.....	.....	.....	.....	.....	.....	Hydrant Branch.
Totals.....	347	8 229	8 911	6 708	6 818	7 152	3		
			1299						
			8812	6					

† Private pipe Lovell Manufacturing Co.

Summary of Main Pipe Laid and Removed in 1898.

PIPE LAID—		Feet.	Inches.
2-inch.....	...	347	8
4 ".....	...	229	8
6 ".....	...	8,812	6
12 ".....	...	7,080	6
24 ".....	...	8,187	1
30 ".....	...	52	3
		<hr/>	
		Total, 24,709	8
PIPE REMOVED—		Feet.	Inches.
4-inch.....	...	30	9
6 ".....	...	89	
		<hr/>	
		119	9
		<hr/>	
		Total, 24,589	11
Private pipe laid for } Lovell Manfg. Co., }		299	
6-inch.....		<hr/>	
		Net total.....	24,888 11
		Or	4 miles 3,768 11
			96 miles 80 6
Previously reported.			
Grand total.....			<hr/>
		100 miles	3,849 5

CROSSES PLACED IN 1898.

Size.	Number.
2 x 2-inch.....	1
6 x 6-inch.....	12
12 x 6-inch.....	14
12 x 8-inch.....	2
12 x 12-inch.....	2
24 x 12-inch.....	1— 32

CROSSES REMOVED IN 1898.

Size.	Number.
6 x 4-inch.....	4— 4
Net increase.....	28

TEES PLACED IN 1898.

Size.	Number.
4 x 4-inch.....	4
6 x 4-inch.....	2
6 x 6-inch.....	12
12 x 6-inch.....	13
12 x 12-inch.....	3
24 x 24 x 12-inch.....	1
24 x 24 x 20-inch.....	1— 36

TEES REMOVED IN 1898.

Size.	Number.
4 x 4-inch.....	1
6 x 4-inch.....	1— 2
Net increase.....	34

Stop Valves Placed in 1898.

Street.	Where Located.	Size	Style.	Remarks.
Front.....	West line of Sassafras....	4	Eddy.	
Water Works Grounds....	{ 3 ft. S. of N. line and 61 ft. W. of W. line of Engine Hse No. 1 }	12	Eddy.	
Water Works Grounds....	{ 34 ⁶ ft. N. of N. line and 59 ft. W. of W. line of Engine Hse No. 1 }	6	Curtis	{ High Pressure Water Relief, Flanged.
Water Works Grounds ...	{ 34 ⁶ ft. N. of N. line and 61 ft. W. of W. line of Engine Hse No 1 }	12	Eddy.	Flanged
Water Works Grounds....	{ 34 ⁶ ft. N. of N. line and 63 ft. W. of W. line of Engine Hse No. 1 }	6	Curtis	{ High Pressure Water Relief, Flanged.
Third	West line of Parade.....	6	Eddy.	
"	East line of German.	4	"	
Fifth	West line of German.....	6	"	{ In place of 6-inch Lud- low taken out.
Sixth.....	West line of Parade.....	6	"	
Seventh.....	East line of Wayne.....	6	"	
"	West line of Wayne.....	6	"	
Tenth	East line of Parade.....	6	"	
Twelfth.....	East line of Reed.....	12	"	
"	West line of Reed.....	6	"	
"	East line of Ash.....	12	"	
"	West line of Wayne.....	6	"	
"	East line of Wallace.....	6	"	
"	West line of Wallace	6	"	
"	East line of Wallace	12	"	
"	West line of Ash.....	6	"	
"	East line of Parade.....	12	"	
Fifteenth.....	West line of Reed.....	6	"	
"	East line of Reed.....	6	"	
Nineteenth	West line of Holland.....	4	"	
"	East line of Walnut.....	12	"	
"	West line of Walnut.....	24	"	
"	East line of Chestnut.....	6	"	
"	East line of Cherry.....	6	"	
"	East line of Wayne.....	6	"	{ For High Pressure System.
Twentieth.....	East line of Chestnut.....	6	"	
"	2 ft. E. of E. line of Chest.	4	"	
Twenty-first.....	West line of Liberty	6	"	
Twenty-second,	West line of Raspberry..	6	"	
"	West line of Myrtle.....	4	"	
Twenty-fourth..	West line of East Ave.....	6	"	
Twenty-fifth.....	West line of Brandes.....	6	"	
Twenty-sixth }	West line of Chestnut.. }	12	"	
" " }	21 ft. N. of S. line 26th }		Pratt	
" " }	627 ft. E. of Cherry..... }	12	&Cady	Swing Check, Flanged.
" " }	21 ft. S. of N. line 26th }			
" " }	614 ft. E. of Cherry..... }	12	Eddy.	
" " }	21 ft. S. of N. line 26th }		Pratt	
" " }	627 ft. E. of Cherry..... }	8	&Cady	Back Pressure, Flanged.
" " }	19 ft. S. of N. line 26th }			

Stop Valves Placed in 1898—Continued.

Street.	Where Located.	Size	Style.	Remarks.
Twenty-sixth	627 ft. E. of Cherry.....		Pratt	
Brandes.....	23 ft. S. of N. line 26th	8	&Cady	Back Pressure, Flanged.
East Avenue..	South line of 25th.....	6	Eddy.	
	82 ⁹ ft. N. of Buffalo Rd			
	27 ft. W. of E. l. E. Ave	12	Eddy.	
" "	72 ⁶ ft. N. of Buffalo Rd		Pratt	
" "	27 ft. W. of E. l. E. Ave	12	&Cady	Swing Check, Flanged.
" "	72 ⁶ ft. N. of Buffalo Rd		Pratt	
" "	25 ft. W. of E. l. E. Ave	8	&Cady	Back Pressure, Flanged.
" "	72 ⁶ ft. N. of Buffalo Rd		Pratt	
" "	29 ft. W. of E. l. E. Ave	8	&Cady	Back Pressure, Flanged.
Wayne.....	South line of 18th.....	6	Eddy.	
Wallace.....	North line of 12th.....	6	"	
Parade.....	South line of 3d.....	6	"	
"	North line of 12th.....	4	"	
"	North line of 12th.....	12	"	
"	South line of 11th.....	4	"	
"	North line of 11th.....	4	"	
"	South line of 9th.....	4	"	
"	North line of 9th...	4	"	
"	South line of 8th.....	4	"	
"	South line of 11th.....	12	"	
"	North line of 11th.....	12	"	
"	25 ⁶ ft. N. of S. line of 10th	12	"	
"	North line of 10th.....	12	"	
"	South line of 9th.....	12	"	
"	North line of 9th.....	12	"	
"	South line of 8th.....	12	"	
"	North line of 8th.....	12	"	
"	North line of 8th.	4	"	
"	South line of 7th.....	12	"	
"	North line of 7th.....	12	"	
"	31 ⁶ ft. N. of S. line of 6th..	12	"	
"	22 ft. N. of S. line of 6th..	4	"	
"	North line of 6th... ..	12	"	
"	South line of 5th.....	12	"	
"	South line of 5th.....	6	"	
Chestnut.....	North line of 21st.....	12	"	{ For High Pressure System.
Walnut.....	339 ⁸ ft. S. of S. l. of 12th...	6	"	
"	17 ft. W. of E. l. Waln. }			
"	2 ⁴ ft. N. of N. line 19th }	2	Hays.	
"	2 ⁴ ft. N. of N. line 19th }			
"	11 ft. W. of E. l. Waln.. }	2	Hays.	{ For use on blow-off. for 24-inch pipe.
Cherry.....	13 ft. S. of N. line 19th...	6	Eddy.	
"	20 ft. S. of N. line 19th...	6	Eddy.	
"	16 ⁶ ft. S. of N. line 19th...	6	Pratt & Cady	Swing Check Valve.
Liberty.	South line of 8th.....	6	Eddy	
Raspberry.....	South line of 26th.....	6	Eddy.	
Columbus.....	East line of Penn'a Ave...	2	Hays.	
Chestnut Lane..	West line of Pine Ave....	6	Eddy.	

Summary of Stop Valves Placed and Removed in 1898.

STYLE—	PLACED.	SIZE	NUMBER.
Hays.....	2-inch	3	
Eddy.....	4-inch	13	
Eddy.....	6-inch	32	
Curtis High Pressure Water Relief Flange Valve..	6-inch	2	
Pratt & Cady Swing Check Valve.....	6-inch	1	
Pratt & Cady Back Pressure Flanged Valve.....	8-inch	4	
Eddy Flanged Valve.....	12-inch	1	
Eddy.....	12-inch	24	
Pratt & Cady Swing Check Flanged Valve..	12-inch	2	
Eddy.....	24-inch	1	
Total.....		—	83
	REMOVED.		
Ludlow.....	6-inch	1	
Eddy (reported, but not set in 1890).....	12-inch	1	2
		—	—
	ADD.		81
Eddy (reported, but not abandoned in 1892).....	6-inch	1	1
		—	—
Total increase.....		...	82

CONNECTIONS MADE IN 1898.

SIZE.	NUMBER.	
3/4-inch	319	
Less removed or abandoned.....	7	
	— 312	
1- inch	3	
1 1/2 "	1	
2 "	8	
4 "	1	
6 "	3	
	— 328	
Amount of pipe used for above.....		5,754 1/2
Less 3/4-inch connections removed or abandoned	104 1/2	
Abandoned in altering 54 connections.....	2,033 1/2	2,138 3/2
		—
Net increase of service pipe..		3,615 3/2
Service pipe in use December 31, 1897.....	40 miles.	3,293
		—
Service pipe in use December 31, 1898.....	41 miles.	1,628 5/2

N. B.—In addition, 62 connections were replaced, or altered, in streets to be paved, and others which had given out, as follows :

WARD.	NUMBER.
First..... 3/4-inch	15
Second..... { 3/4 " 38	40
{ 1 " 1	
{ 1 1/2 " 1	
Third..... 3/4 "	4
Fourth..... 3/4 "	1
Fifth..... 3/4 "	1
Sixth..... 3/4 "	1
Total.....	— 62

Statement of Connections made to December 31, 1898.

WARD.	IN PAVED STREETS. NOT IN USE.						IN USE.								TOTAL.										
							SIZE IN INCHES.								SIZE IN INCHES.										
	¾	1	1½	4	TOTAL	¾	1	1¼	1½	2	2½	3	4	6	TOTAL	¾	1	1¼	1½	2	2½	3	4	6	TOTAL
First.....	104	.....	.....	.....	104	1351	20	.....	10	11	.....	.....	15	.....	1407	1455	20	.....	10	11	.....	.....	15	.....	1511
Second.....	236	1	1	1	239	2071	15	.....	26	19	.....	.....	39	10	2180	2307	16	.....	27	19	.....	.....	40	10	2419
Third.....	386	1	.....	.....	387	1856	33	.....	22	22	1	.....	25	4	1963	2242	34	.....	22	22	1	.....	25	4	2350
Fourth.....	211	1	.....	.....	212	1567	28	3	17	26	.....	.....	13	.....	1654	1778	29	3	17	26	.....	.....	13	.....	1866
Fifth.....	53	.....	.....	.....	53	1136	12	1	11	9	.....	.....	4	.....	1173	1189	12	1	11	9	.....	.....	4	.....	1226
Sixth.....	70	2	.....	3	75	1264	17	.....	9	8	.....	1	5	.....	1304	1334	19	.....	9	8	.....	1	8	.....	1379
Seventh.....	.....	.....	.....	.....	.....	45	4	1	6	3	.....	1	3	1	64	45	4	1	6	3	.....	1	3	1	64
Total.....	1060	5	1	4	1070	9290	129	5	101	98	1	2	104	15	9745	10350	134	5	102	98	1	2	108	15	10815

Total number reported in 1897..... 10,487

Total number made in 1898..... 335

Removed and abandoned in 1898..... 7

Net increase in 1898..... 328

Total number December 31, 1898..... 10,815

COMPARATIVE STATEMENT OF WATER RATES IN TWENTY-SEVEN CITIES IN THE U. S.

CITY.	WATER WORKS SYSTEM.	METER.			RATES.				TOTALS
		Flat.	Lowest.	Highest.	Family.	Bath.	Water Closet.	Sprinkling.	
NAME.	Population.								
Albany, N. Y.	100,000	8	.....	.....	\$18 00	.....	\$2 00	.....	\$20 00
Allegheny, Penna.	125,000	10	.....	.....	16 25	.....	9 00	.....	33 75
Boston, Mass.	520,000	.....	10 1/2	18 1/2	8 00	3 00	10 00	5 00	26 00
Cambridge, Mass.	87,000	.....	10	30	8 00	4 00	5 00	5 00	22 00
Chicago, Ill.	1,750,000	.....	8	10	14 50	.....	3 00	3 00	20 50
Cincinnati, Ohio	406,000	.....	8 1/2	20	7 50	2 70	8 00	8 94	27 14
Cleveland, Ohio.	370,000	5 1/2	.....	.....	6 50	2 00	4 00	1 00	13 50
Dayton, Ohio.	85,000	.....	7	8	6 00	2 00	3 50	6 64	18 14
Des Moines, Iowa.	68,000	.....	10	30	6 75	2 00	5 00	7 50	22 25
ERIE, PENNA.	55,000	6	.....	.....	5 00	3 00	4 50	3 00	15 50
Fall River, Mass.	98,000	.....	10	28	10 00	5 00	8 00	6 00	29 00
Grand Rapids, Mich.	90,000	.....	4 1/2	20	6 00	3 00	5 00	11 29	25 29
Harrisburg, Penna.	60,000	.....	2 1/2	13 1/2	10 50	4 00	3 00	7 10	19 50
Indianapolis, Ind.	169,155	.....	6	20	9 00	3 00	5 00	7 10	24 10
Lancaster, Penna.	40,000	5	.....	.....	6 00	3 00	6 00	5 00	20 00
Lawrence, Mass.	54,500	.....	8	20	5 50	3 40	4 40	3 30	16 60
Lowell, Mass.	90,000	.....	13 1/2	18 1/2	6 00	3 00	6 00	3 00	18 00
Milwaukee, Wis.	270,000	6	.....	.....	10 00	3 00	3 50	17 42	33 92
.....	1,300,000	4	.....	.....	5 00	3 00	2 00	5 00	15 00
.....	300,000	.....	8	20	13 00	1 00	6 00	8 00	28 00
.....	150,000	.....	15	20	6 00	5 00	8 00	5 00	24 00
.....	87,735	.....	2 1/2	50	4 50	2 50	4 00	9 00	20 00
Rochester, N. Y.	170,000	.....	10	14	5 00	2 00	3 00	4 00	14 00
Saginaw, Mich.	52,000	.....	6	11	9 00	3 00	4 00	3 00	19 00
Springfield, Mass.	55,000	.....	7	30	8 00	4 00	6 00	5 00	23 00
Syracuse, N. Y.	135,000	.....	4 1/2	18 1/2	5 00	4 00	6 00	6 00	21 00
Worcester, Mass.	102,000	.....	15	25	7 00	5 00	6 00	5 00	23 00

Building—Two stories high; 10 rooms; assessed valuation \$1,500.00 to \$3,000.00.

Family—Six persons. Three faucets and three sinks allowed with each family.

Fixtures—One bath; two water closets, and faucet for sprinkling.

Lot—Inside lot; 41 1/2 feet front on a 60-foot street; 105 feet or less in depth.

ERIE, PENNA.—Family, \$5.00. Bath tub, \$3.00; each additional, \$1.50. Water closet, \$3.00; each additional, \$1.50. Sprinkling, 41 feet front or less, \$3.00; each additional foot front, 5 cents.

ALBANY, N. Y. Two-story dwellings on a lot from 40 feet to 50 feet wide, each, includes one each bath tub and water closet and sprinkling; each bath and closet above one, \$2.00.

ALLEGHENY, PENNA. — Six-room house, \$10.25; each additional room, \$1.50. Each bath tub, hot and cold water, \$3.00. Water closets, not less than \$2.00; nor more than \$10.00; each additional closet, $\frac{1}{2}$ rates. Street washer, \$1.00 to \$10.00.

ANCONA, MASS. — Family, every dwelling-house shall be charged, when it is valued for the assessment of taxes at \$20.00 or any sum less, and occupied by one family only, \$5.00, more than \$20.00 and not more than \$100.00, \$6.00, and for every additional \$100.00 or fractional part thereof, \$1.00, until the valuation for the assessment of taxes shall amount to \$250.00. Bath tubs, \$3.00 each. Water closets, each, \$5.00. Sprinkling, \$5.00.

CAMBRIDGE, MASS. — Family, first faucet, \$4.00; each additional faucet, \$2.00. First water closet, \$3.00; each additional, \$2.00. Sprinkling, hose that 5,000 feet, \$3.00.

CHICAGO, ILL. — Two-story dwelling on a lot from 40 feet to 44 feet wide, \$14.00, which carries with it one each bath tub and water closet; each additional of each, \$3.00. Sprinkling, \$3.00.

CINCINNATI, OHIO. — Nine to 10-room house, \$7.50. Each bath tub, \$2.70. Each water closet, \$4.00. Sprinkling, 1 cent per square yard.

CLEVELAND, OHIO. — Dwellings, one, two or three rooms, \$3.00; each additional room, .50c. Bath tubs, each, \$2.00. Water closets, each, \$2.50. Sprinkling, lot 60 feet or less in front, $\frac{3}{4}$ -inch c.

DAYTON, OHIO. — Dwellings, six rooms or less. Utational room, .30c. Bath tub, \$2.00; each additional main tub, .25. Water closet, \$2.50; each additional, \$1.00. Sprinkling, 25 feet front or less, \$1.00; each additional foot front extending back 20 feet or less, .02 cts., additional square yards on premises, .005 cts.

DENVER, COLO. — Family — Dwelling, 5 rooms or less, \$4.00, 6 to 9 rooms, each, 75c. over 9, each, .50c. Bath tub, \$4.00 for first one, \$2.00 for each additional. Water closet, for first one, \$3.00; for each additional, \$2.00. Sprinkling, 50 feet front, \$7.50; each additional foot, 11c.

FALL RIVER, MASS. — Family, first faucet \$5.00; each additional faucet, \$2.50. Bath tub, first one, \$5.00; each additional one, \$4.00. Water closet, first one, \$5.00; each additional one, \$3.00. Sprinkling, where nozzle not exceeding 1-inch diameter is used, \$4.00.

GRAND RAPIDS, MICH. — Family, four persons or less, \$4.00; each additional person, \$1.00. Bath tub, four persons or less, one of more tubs, \$2.00 each additional person using same. .30c. Water closets, four persons or less, one or more, \$2.00 each additional person using same. .50c. Hopper or bucket, \$1.00. Sprinkling, for each 1,000 square feet of lot front street 1 cent, 100 ft. for remainder .50 cts. (10 ft.)

HARTFORD, CONN. — Family, first openings, 2-story house on street, \$6.70. Sinks, \$2.00. Bath tubs, \$4.00. Water closets, \$3.00. Sprinkling, \$2.00.

INDIANAPOLIS, IND. — Family, 3 rooms, \$4.00. 6 rooms or less, \$5.00; each additional room, \$1.00. Bath tub, first one, \$3.00; each additional tub, \$2.00. Water closets, first one, \$3.00; each additional closet, \$2.00. Sprinkling, 30 feet and under, \$6.00; each additional foot over 30 ft., 10c.

LANCASTER, PENNA. — Family, two-story house, \$6.00. Bath tub, \$3.00 each. Water closet, \$3.00 each. Sprinkling, \$4.00 per season.

LAWRENCE, MASS. — Family, five persons or less, \$3.00; each additional person, .50c. Bath tub, 5 persons or less, \$3.00; each additional person to 12, .40c; each additional tub, \$2.00. Water closet, 5 persons or less, \$4.00; each additional person, .40c. Sprinkling, under 25 feet front, .25 cts., additional and from 25 to 50 feet, .40c.

MASSACHUSETTS, N. Y. — Family, as-cased valuation \$1,000.00 to \$2,000.00, \$5.00. Bath tub, first tub, \$2.00; each additional tub, \$1.00. Water closets, first closet, \$2.00; each additional closet, \$1.00. Sprinkling, 50 feet frontage or less, \$4.00; each additional foot front up to 100 feet, .8c.; each additional foot front over 100 feet, .5c.; hose attachment over two, each, \$2.00.

Statement of Meters December 31, 1898.

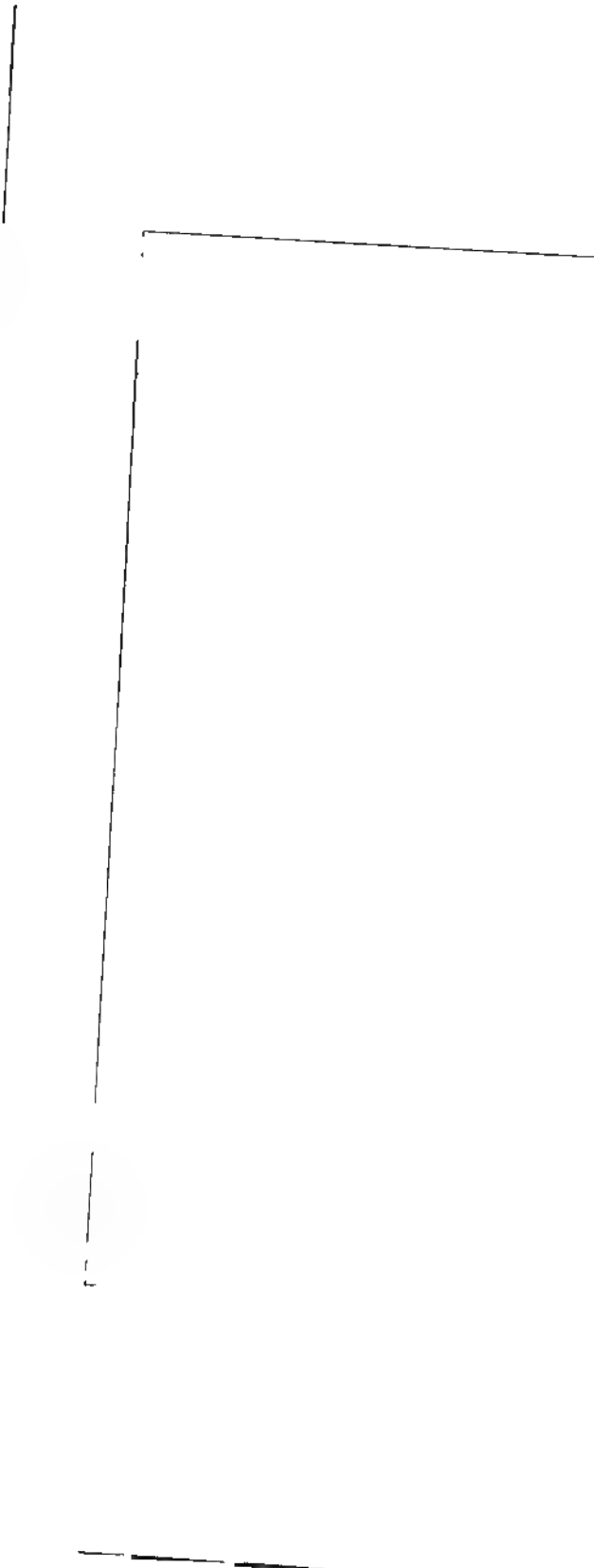
KIND.	IN USE								NOT IN USE								TOTAL									
	Size in Inches.								Size in Inches.								Size in Inches.									
	3 1/2	1	1 1/2	2	3	4	6	Total	6	Total	5 1/2	1	1 1/2	2	3	4	6	Total	5 1/2	1	1 1/2	2	3	4	6	Total
Columbia.....	1							1										1								1
Crown.....	1	5	2	1	8	1	2	20										2				1	8	1	2	20
Empire.....			2					5																		5
Gem.....								3										2								3
National.....								1																		1
Pittsburgh Disc.....	1							2																		3
Thomson.....	3	6	4	3	5	1	3	25																		27
Union.....	4	61	10	15	19	7	9	126																		135
Worthington.....		3	7	4	1			16																		20
Total.....	to	76	25	24	39	10	14	199										39	10			16				215

XXXIII
ANNUAL REPORT
OF THE
COMMISSIONERS OF
WATER WORKS,
IN THE CITY OF ERIE,
TO THE
COUNCILS,
FOR THE
YEAR ENDING DECEMBER 31, 1899.



ERIE, PA.,
TIMES PUBLISHING COMPANY
1900.

PUMPING STATION AS SEEN FROM THE RAY.



**Commissioners of Water Works,
In the City of Erie,
ERIE, PA.**

**WILLIAM HARDWICK.
T. W. SHACKLETT,
CLARK OLDS.**

OFFICERS.

CLARK OLDS,
President.

WILLIAM HIMROD,
Secretary and Treasurer.

GEO. C. GENSHEIMER,
Assistant Secretary.

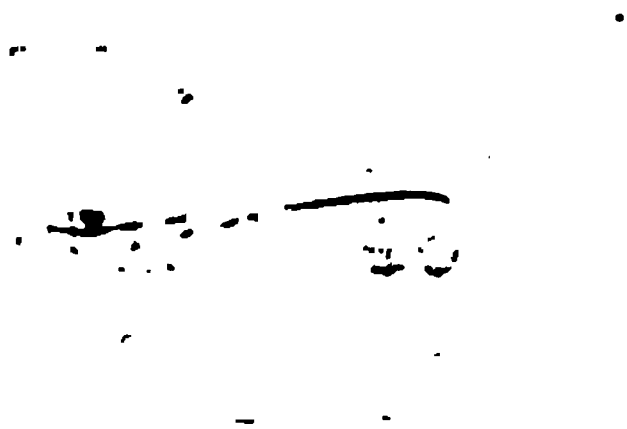
F. A. ROTH,
Chief Engineer at Pumping Station.

R. T. WALKER,
Superintendent of Street Work.

OFFICE, CITY HALL.

OFFICE HOURS. From 8:00 a. m. to 5:00 p. m.; on Mondays to 9:00 p. m.

REGULAR MEETINGS OF THE COMMISSIONERS. Every Saturday at 4:00 p. m., and the first of each month at 11 a. m., except when it occurs on Sunday, then they meet the following day. Special meetings when necessary.



ANNUAL REPORT.

To the Councils of the City of Erie, Pa.:

GENTLEMEN:—

We herewith submit the thirty-third annual report of this department for the year ending December 31, 1899:

RECEIPTS.

Balance in City Treasury Dec. 31, 1898,	\$	37	54
From Water Rents:			
Assessments	\$	104,109	28
Meters		34,441	09
Building Permits		646	92
Special Permits		146	73
			<hr/>
			139,344 02
From other sources			496 21
			<hr/>
Total .			139,877 77

DISBURSEMENTS.

Construction	\$	93,337	92
Maintenance		15,557	17
Operating		21,773	33
Accounting		8,361	80
Legal		183	33
			<hr/>
			139,213 55
Balance in City Treasury Dec. 31, 1899....			664 22
			<hr/>
Total	\$	139,877	77

The accounts of this department have not been audited for the period of three years and we reiterate our request that this important duty be performed, at least, once annually.

The increase in the receipts over the previous year, as shown by the books, amounts to the sum of \$7,284.98.

The condition of the department is such, that the Commissioners felt justified in recommending a reduction of the water rates to your Honorable Bodies.

In accordance with such recommendations the meter rate of six cents per thousand gallons was repealed and a rule adopted to take effect July 1, 1899, fixing the rate at twenty cents per thousand gallons for the first twenty-five thousand gallons of water and four cents per thousand gallons thereafter.

The rate for schools, churches, parsonages, parish houses, hospitals and other charitable institutions was fixed at one-third of the regular rate.

The rate for all water takers outside the city limits was reduced from fifty per centum to twenty-five per centum above the regular rate.

These changes in the water rates reduced the revenues of the department for the half year ending December 31, 1899, to the amount of \$4,832.41, which will be rebated out of the earnings for 1900.

The family rate was changed from five to four dollars per annum to take effect January 1, 1900. There are at present 10,249 families paying the family rate. This change will reduce the revenues of the department for the year 1900 to the amount \$10,249.00.

The meter rate as now established is intended to apply to all water takers.

In the near future we intend to recommend a reduction of the minimum meter rates and a change in the rules, to allow all water takers, who desire, to take water by meter measurement.

The amount of water pumped was 2,722,322,604 gallons, an increase of 451,802,076 gallons over the year 1898, a daily average pumpage of 7,458,418 gallons.

This is a daily per capita pumpage of nearly 125 gallons for a city of 60 000 inhabitants.

The liberal introduction of meters will probably reduce the revenues, but their introduction will curtail the waste of water. We hope the department will save in the cost of pumpage more than it will lose in revenues.

The total length of the water mains are a little over 103 1-2 miles.

During the year 1899 we laid almost three miles of new mains, took up about one mile of four and six inch mains and re-laid larger mains in their places.

The twenty-four inch main in Cherry Street was extended from Nineteenth to Twenty-sixth Streets.

At the Pumping Station we installed an 8,000,000 gallon Worthington High Duty pumping engine.

This pump was completed, tested and started in actual service on the 1st day of August, 1899, by its use we give to all that portion of the city lying south of Nineteenth Street the same average pressure of water as is had in the balance of the city.

It was our intention to construct a standpipe in connection with the high system and we installed temporarily a system of check and relief valves between the two systems, the operation of which has been so satisfactory that the construction of the standpipe may be indefinitely postponed.

It is our desire to give to the whole city an adequate supply of water with a uniform pressure. In order to accomplish this end we are extending the large mains so as to belt districts. This work is so far advanced that we believe we are able to supply all extraordinary demands for water that may be made, in every part of the city.

It is our intention to pay to the sinking fund commissioners the sum of \$25,000.00 out of the revenues of the department for the year 1900.

The most important question which confronts this department, at present, is the gradual pollution of the bay by the sewage from the city.

Slowly but surely the source of supply is being polluted, which affects the health of the whole city. It is a question of vital importance to every citizen.

In each annual report for the past 19 years this department has called the attention of your Honorable bodies to the necessity of changing the mouth of Mill Creek or the construction of an intercepting sewer.

We believe it is the duty of the city to take care of its sewage and earnestly hope some plan will be devised to separate the

sewage from the waters of Mill Creek and save the bay from further pollution.

The Act of Assembly creating this department imposes upon the Commissioners the duty of providing "a full supply of pure and wholesome water."

Under present conditions this will soon be impossible, without the extension of the intake pipe into the open lake or the installation of a filter plant, either of which will require the expenditure of a large amount of money.

The law imposes upon the Commissioners the duty of furnishing "pure and wholesome water." It would seem, therefore, that anything which tended to improve the quality of the water supply would be within the scope of their authority, and we suggest to your Honorable bodies that we will be glad to co-operate with you in devising and completing a plan for separating the city sewage from the waters of Mill Creek or for turning the creek into the open lake, and thereby divert from the bay this great volume of polluted water, which is a menace to the health of the city.

Respectfully submitted,

CLARK OLDS,

WM. HARDWICK,

T. W. SHACKLETT,

Commissioners.



RESERVOIR

Commissioners of Water Works, in the City of Erie from Organization to December 31, 1899.

The Commissioners of Water Works, in the City of Erie, are appointed by the Court of Common Pleas of Erie County, Penna., for a term of three years, one member being named annually, in May.

1867	*W. L. Scott,	*Henry Rawle,	Wm. W. Reed.
1868	*John C. Selden,	*Henry Rawle,	Wm. W. Reed.
1869	*John C. Selden,	*Henry Rawle,	Wm. W. Reed.
1870	*John C. Selden,	*Henry Rawle,	Wm. W. Reed.
1871	*†John C. Selden,	*Henry Rawle,	Wm. W. Reed.
1872	Matthew R. Barr,	John Gensheimer,	Wm. W. Reed.
1873	Matthew R. Barr,	John Gensheimer,	Wm. W. Reed.
1874	Matthew R. Barr,	John Gensheimer,	Wm. W. Reed.
1875	Matthew R. Barr,	John Gensheimer,	Wm. W. Reed.
1876	Matthew R. Barr,	John Gensheimer,	Wm. W. Reed.
1877	Michael Liebel,	John Gensheimer,	Wm. W. Reed.
1878	Michael Liebel,	*J. M. Bryant,	Wm. W. Reed.
1879	Michael Liebel,	*J. M. Bryant,	*G. W. F. Sherwin.
1880	Michael Liebel,	*J. M. Bryant,	*G. W. F. Sherwin.
1881	Michael Liebel,	Benjamin Whitman,	*G. W. F. Sherwin.
1882	Michael Liebel,	Benjamin Whitman,	*G. W. F. Sherwin.
1883	Michael Liebel,	Benjamin Whitman,	*G. W. F. Sherwin.
1884	Michael Liebel,	Benjamin Whitman,	*G. W. F. Sherwin.
1885	Michael Liebel,	Benjamin Whitman,	Geo. W. Starr.
1886	C. Kessler,	Benjamin Whitman,	Geo. W. Starr.
1887	C. Kessler,	C. J. Brown,	Geo. W. Starr.
1888	C. Kessler,	C. J. Brown,	Geo. W. Starr.
1889	C. Kessler,	C. J. Brown,	Geo. W. Starr.
1890	C. Kessler,	C. J. Brown,	Geo. W. Starr.
1891	C. Kessler,	C. J. Brown,	Wm. Hardwick.
1892	T. W. Shacklett,	C. J. Brown,	Wm. Hardwick.
1893	T. W. Shacklett,	C. J. Brown,	Wm. Hardwick.
1894	T. W. Shacklett,	C. J. Brown,	Wm. Hardwick.
1895	T. W. Shacklett,	†C. J. Brown,	Wm. Hardwick.
1896	T. W. Shacklett,	Clark Olds,	Wm. Hardwick.
1897	T. W. Shacklett,	Clark Olds,	Wm. Hardwick.
1898	T. W. Shacklett,	Clark Olds,	Wm. Hardwick.
1899	T. W. Shacklett,	Clark Olds,	Wm. Hardwick.

*Dead.

†Mr. Selden resigned before the expiration of his second term; Mr. Barr was substituted by the other Commissioners, and afterward appointed by the Court.

‡C. J. Brown resigned December 28, 1895, having been elected Treasurer of Erie County, Penna. Clark Olds was chosen by the other Commissioners, for the unexpired term, on recommendation of the Court, January 2, 1896.

*Officers of Water Works, from Organization to
December 31, 1899.*

	President.	Secretary & Treasurer.	Assistant Secretary
1867	Wm. W. Reed,	*Wm. Brewster,	.....
1868	Wm. W. Reed,	*Wm. Brewster,	.....
1869	Wm. W. Reed,	*J. C. Perkins,	.....
1870	Wm. W. Reed,	*J. C. Perkins,	.....
1871	Wm. W. Reed,	*J. C. Perkins,	.....
1872	Wm. W. Reed,	*J. C. Perkins,	.....
1873	Wm. W. Reed,	*J. C. Perkins,	.....
1874	Wm. W. Reed,	*J. C. Perkins,	.....
1875	Wm. W. Reed,	*J. C. Perkins,	.....
1876	Wm. W. Reed,	*J. C. Perkins,	.....
1877	Wm. W. Reed,	*J. C. Perkins,	.....
1878	Wm. W. Reed,	*J. C. Perkins,	.....
1879	Michael Liebel,	B. F. Sloan,	.....
1880	Michael Liebel,	B. F. Sloan,	.....
1881	*G. W. F. Sherwin,	B. F. Sloan,	.....
1882	*G. W. F. Sherwin,	B. F. Sloan,	.....
1883	*G. W. F. Sherwin,	B. F. Sloan,	.....
1884	Benjamin Whitman,	B. F. Sloan,	Geo. C. Genshelmer.
1885	Benjamin Whitman,	B. F. Sloan,	Geo. C. Genshelmer.
1886	Benjamin Whitman,	B. F. Sloan,	Geo. C. Genshelmer.
1887	Geo. W. Starr,	B. F. Sloan,	Geo. C. Genshelmer.
1888	Geo. W. Starr,	B. F. Sloan,	Geo. C. Genshelmer.
1889	Geo. W. Starr,	B. F. Sloan,	Geo. C. Genshelmer.
1890	Geo. W. Starr,	B. F. Sloan,	Geo. C. Genshelmer.
1891	C. J. Brown,	Wm. Himrod,	Geo. C. Genshelmer.
1892	C. J. Brown,	Wm. Himrod,	Geo. C. Genshelmer.
1893	C. J. Brown,	Wm. Himrod,	Geo. C. Genshelmer.
1894	Wm. Hardwick,	Wm. Himrod,	Geo. C. Genshelmer.
1895	Wm. Hardwick,	Wm. Himrod,	Geo. C. Genshelmer.
1896	T. W. Shacklett,	Wm. Himrod,	Geo. C. Genshelmer.
1897	T. W. Shacklett,	Wm. Himrod,	Geo. C. Genshelmer.
1898	T. W. Shacklett,	Wm. Himrod,	Geo. C. Genshelmer.
1899	Clark Olds,	Wm. Himrod,	Geo. C. Genshelmer.

*Dead.

NOTE.—Mr. Brewster was elected June 14, 1867; resigned October 26, 1868, to take effect November 2, 1868; served 1 year, 4 months and 18 days. Mr. Perkins was elected October 26, 1868, to take effect November 2, 1868; resigned March 30, 1878; same accepted December 21, 1878, to take effect January 1, 1879; served 10 years, 1 month and 29 days. Mr. Sloan was elected December 21, 1878, to take effect January 1, 1879; continued in office to June 1, 1891; served 12 years and 5 months. Mr. Himrod was appointed Secretary May 23, 1891, to take effect June 1, 1891. Mr. Genshelmer was appointed Assistant Secretary January 26, 1884.

Monthly Receipts from all Sources during the Year
Ending December 31, 1899.

Month.	Assessment	Meter.	Special.	Plumbing.	Building.	Total.
January....	\$ 23,455 46	\$7,414 28	\$ 6 75	\$ 1 78	\$ 19 10	\$ 30,896 97
February ..	1,961 39	242 37	4 58	27 86	18 90	2,255 10
March	194 14	3 75	14 10	9 63	38 42	260 04
April	23,017 51	6,834 98	3 75	31 02	36 34	29,923 60
May	2,055 52	156 43	19 17	76 85	122 70	2,430 67
June.....	520 06	673 01	13 45	8 84	27 75	1,243 11
July.....	24,165 34	7,539 76	22 92	81	11 98	31,740 81
August ...	2,081 53	178 71	36 18	56 36	130 52	2,483 30
September..	311 92	44 31	3 51	.....	85 04	444 78
October....	24,219 61	8,253 02	13 00	67 32	107 89	32,660 84
November..	2,025 65	728 50	9 32	64 44	37 32	2,865 23
December..	101 15	2,371 97	.....	151 76	10 96	2,635 78
Total	\$104,109 28	\$34,441 09	\$ 146 73	\$ 496 21	\$ 646 92	\$139,840 23

Receipts from each Ward during the Year Ending
December 31, 1899.

Ward.	Assessment.	Meter.	Special.	Plumbing.	Building.	Total.
First.....	\$ 14,013 18	\$3,108 83	\$ 19 16	\$ 77 05	\$ 164 18	\$ 17,382 40
Second.....	22,665 00	17,503 25	31 00	87 52	160 14	40,446 91
Third.....	24,866 28	5,498 61	19 75	230 89	104 82	30,720 35
Fourth....	19,889 59	1,203 38	17 93	30 65	54 13	21,195 68
Fifth.....	10,000 64	5,328 02	35 59	1 00	94 93	15,460 18
Sixth.....	11,874 55	1,168 02	1 67	4 21	36 48	13,084 93
*Seventh...	800 04	630 98	21 63	64 89	32 24	1,549 78
Total	\$104,109 28	34,441 09	\$ 146 73	\$ 496 21	\$ 646 92	\$138,840 23

*Account outside of City Limits.

Cash Account of Secretary and Treasurer of Commissioners of Water Works, in the City of Erie, for the Year Ending December 31, 1899.

Month.	Receipts.	Deposited with Treasurer City of Erie.	Balance in Office at Close of Business each month.
January	\$ 30,896 97	\$ 25,984 41	\$ 4,912 56
February	2,255 10	6,500 25	667 41
March	260 04	339 55	587 90
April	29,923 60	23,670 16	6,841 34
May	2,430 67	9,105 44	166 57
June	1,243 11	1,318 62	91 06
July	31,740 81	26,926 31	4,905 56
August	2,483 30	7,328 22	60 64
September	444 78	390 77	114 65
October	32,660 84	28,226 37	4,549 12
November	2,865 23	6,749 17	665 18
December	2,635 78	3,300 96	.....
Total	\$ 139,840 23	\$ 139,840 23	.....

Statement of Account with Treasurer of the City of Erie for the Year Ending December 31, 1899.

Month.	Received from Sec'y and Treas Commissioners of Water Works, in the City of Erie.	Paid on Warrants of Commissioners of Water Works, in the City of Erie	Monthly Balances.
Balance From 1898.....	\$ 37 54	.....	.....
January	25,984 41	18,158 92	\$ 7,863 03
February	6,500 25	10,017 50	4,345 78
March	339 55	1,996 90	2,688 43
April	23,670 16	12,237 78	14,120 81
May	9,105 44	6,174 12	17,052 13
June	1,318 62	7,287 47	11,083 28
July	26,926 31	7,384 54	30,625 05
August	7,328 22	22,078 75	15,874 52
September	390 77	12,075 42	4,189 87
October	28,226 37	15,690 54	16,725 70
November	6,749 17	6,382 07	17,092 80
December	3,300 96	19,729 54	664 22
Total	\$ 139,877 77	\$ 139,213 55	\$ 664 22

***Amount Collected Annually for Water Furnished,
showing Total Collections also the Increase
and Decrease each Year since the Com-
mencement of the Water Works.***

Year Ending Dec. 31st.	RECEIVED.		ANNUAL.	
	Annually.	Totals.	Increase.	Decrease.
1869.....	\$ 4,264 47	.....	.....	.....
1870.....	9,237 30	\$ 13,501 77	\$ 4,972 83	.....
1871.....	18,138 08	31,639 85	8,900 78	.....
1872.....	21,652 68	53,292 53	3,514 60	.....
1873.....	25,560 40	78,852 93	3,907 72	.....
1874.....	27,938 90	106,791 83	2,378 50	.....
1875.....	29,639 38	136,431 21	1,700 48	.....
1876.....	31,048 76	167,479 97	1,409 38	.....
1877.....	32,276 57	199,756 54	1,227 81	.....
1878.....	29,636 01	229,392 55	.....	\$2,640 56
1879.....	33,343 20	262,735 75	3,707 19	.....
1880.....	37,385 00	300,120 75	4,041 80	.....
1881.....	40,385 87	340,506 62	3,000 87	.....
1882.....	43,818 73	384,325 35	3,432 86	.....
1883.....	48,269 89	432,595 24	4,451 16	.....
1884.....	51,852 78	484,448 02	3,582 89	.....
1885.....	53,550 35	537,998 37	1,697 57	.....
1886.....	58,725 00	596,723 37	5,174 65	.....
1887.....	67,121 92	663,845 29	8,396 92	.....
1888.....	73,197 03	737,042 32	6,075 11	.....
1889.....	81,110 68	818,153 00	7,913 65	.....
1890.....	87,279 96	905,432 96	6,169 28	.....
1891.....	93,891 55	999,324 51	6,611 59	.....
1892.....	105,527 03	1,104,851 54	11,635 48	.....
1893.....	111,247 43	1,216,098 97	5,720 40	.....
1894.....	111,821 94	1,327,920 91	574 51**
1895.....	116,927 63	1,444,848 54	5,105 69	.....
1896.....	121,442 94	1,566,291 48	4,515 31	.....
1897.....	124,106 61	1,690,398 09	2,663 67	.....
1898.....	131,303 48	1,821,701 57	7,196 87	.....
1899.....	139,344 02	1,961,054 59	8,040 54	.....

*Meter rates for water changed from a sliding scale of 6 cents to 10 cents per 1,000 gallons, according to amount consumed, to a flat rate of 6 cents per 1,000 gallons, causing a reduction in receipts of \$5,000.00.

STATEMENT OF WARRANTS ISSUED IN 1899.**JANUARY.****TO PAY VOUCHER.**

Date.	No.	Of	For	Amount.
7	9517	Geo. C. Gensheimer, Ass't Sec'y,		
		Sundries.. . . .	\$ 12 07	
	9518	Pay Roll Street Work.		
		Disbursed by M. L. Whitley, Clerk.. . . .	235 41	
14	9519	Jos. H. King & Co.,		
		Teaming.. . . .	4 99	
	9520	Geo. C. Gensheimer, Ass't Sec'y,		
		Sundries.... .	7 56	
	9521	Pay Roll, Street Work,		
		Disbursed by M. L. Whitley, Clerk.... .	210 82	
	9522	Mayer Bros.,		
		Repairing Pavements.. . . .	2,177 83	
17	9523	Lake Shore Foundry,		
		Pipe.. . . .	5,854 38	
21	9524	Pay Roll, Street Work,		
		Disbursed by M. L. Whitley, Clerk.. . . .	256 43	
28	9525	W. De Witt Himrod,		
		Stationery.. . . .	30 95	
	9526	Globe Iron Foundry Co.,		
		Castings.. . . .	121 70	
	9527	F. P. Gill,		
		Patterns.. . . .	125 20	
	9528	Pay Roll, Street Work,		
		Disbursed by M. L. Whitley, Clerk.. . . .	167 35	
	9529	F. A. Mizener,		
		Coal.. . . .	167 37	
	9530	Lake Shore Foundry,		
		Pipe.. . . .	8,786 86	
Total.. . . .				\$18,158 92

FEBRUARY.**TO PAY VOUCHER.**

Date.	No.	Of	For	Amount.
1	9531	Pay Roll, Pumping Station,		
		Disbursed by Geo. C. Gensheimer, Ass't Sec'y..	710 00	
	9532	Pay Roll, Office and Inspectors,		
		Disbursed by Geo. C. Gensheimer, Ass't Sec'y..	866 66	
4	9533	Mehl & Sapper,		
		Hardware and Tools.. . . .	1 80	
	9534	TheAtlantic Refining Company, Eclipse Station,		
		Oil.. . . .	2 00	
	9535	Hollands Mfg. Co.,		
		Tools.. . . .	3 10	
	9536	The Flickinger Roofing & Cornice Co., Ltd.,		
		Tools.. . . .	3 56	

FEBRUARY, Continued.

TO PAY VOUCHER.

Date.	No.	Of	For	Amount.
4	9537	A. V. Fox,		
		Horse Shoeing.. .. .	\$	4 00
	9538	Erie Window Glass Co.,		
		Paint.. .. .		4 50
	9539	Keystone Electric Company,		
		Carbon Brushes.....		4 80
	9540	Herald Printing & Publishing Co.,		
		Advertising.....		5 00
	9541	Held, Gorenflo & Co.,		
		Advertising.. .. .		5 00
	9542	The Dispatch Publishing Company,		
		One Year's Subscription.. .. .		6 00
	9543	A. S. Pinney,		
		Hardware & Tools.. .. .		6 43
	9544	Brown & Thomas,		
		Iron Rail and Beam.. .. .		6 68
	9545	C. Kessler		
		Manilla and Soap.. .. .		7 06
	9546	The Atlantic Refining Company, Eclipse Station,		
		Oil.. .. .		8 90
	9547	The Dispatch Publishing Company,		
		Advertising.. .. .		9 60
	9548	Globe Iron Foundry Co.,		
		Castings.. .. .		10 45
	9549	Franklin Coal Co.,		
		Coal.. .. .		11 00
	9550	G. J. Gebhardt,		
		Coal and Wood.. .. .		11 75
	9551	O. C. Thayer & Son,		
		Cement.. .. .		13 35
	9552	Wm. Schade,		
		Blacksmithing and Tools.. .. .		13 41
	9553	J. M. Dunn,		
		Brick.. .. .		13 65
	9554	David Schlosser,		
		Lumber.. .. .		15 67
	9555	Constable Bros.,		
		Labor and Material on Buildings.. .. .		17 09
	9556	Hays Manufacturing Co.,		
		Fittings and Pipe.. .. .		18 23
	9557	E. J. Riblet,		
		Shop Rent.. .. .		20 00
	9558	Herald Printing & Publishing Co.,		
		Binding and Indexing Books.. .. .		20 00
	9559	The Holly Manufacturing Company,		
		Valve Rubbers and Cages.. .. .		40 00
	9560	Erie Oil Works,		
		Oil.. .. .		87 36
	9561	Erie Mfg. & Supply Co.,		
		Boiler Compound, Waste, Packing, etc.,... ..		94 02
	9562	The Atlantic Refining Company, Eclipse Station,		
		Oil.. .. .		94 68
	9563	Pay Roll, Street Work,		
		Disbursed by M. L. Whitley, Clerk.. .. .		126 30

FEBRUARY, Continued.

TO PAY VOUCHER.

Date.	No.	Of	For	Amount.
4	9564	F. A. Mizener,		
		Coal.. .. .	..\$	535 86
	9565	Geo. C. Gensheimer, Ass't Sec'y,		
		Sundries.. .. .		18 20
	9566	Isador Sobel, Postmaster,		
		Postal Cards.. .. .		100 00
11	9567	Geo. C. Gensheimer, Ass't Sec'y,		
		Sundries.. .. .		13 66
	9568	Pay Roll, Street Work,		
		Disbursed by M. L. Whitley, Clerk.. .. .		125 25
18	9569	Geo. C. Gensheimer, Ass't Secy.,		
		Sundries.. .. .		9 25
	9570	Pay Roll, Street Work,		
		Disbursed by M. L. Whitley, Clerk,		158 70
25	9571	Pay Roll, Street Work,		
		Disbursed by M. L. Whitley, Clerk.. .. .		339 76
28	9572	Erie Window Glass Co.,		
		Brushes and Varnish.. .. .		3 05
	9573	Frank Senger,		
		Gutter Stone.. .. .		4 80
	9574	Union Water Meter Company,		
		Repairing Meter.. .. .		5 75
	9575	A. V. Fox,		
		Horse Shoeing.. .. .		7 20
	9576	Franklin Coal Co.,		
		Coal and Wood.. .. .		7 50
	9577	Wm. Schade,		
		Blacksmithing and Tools.. .. .		8 45
	9578	E. J. Riblet,		
		Shop Rent.. .. .		20 00
	9579	Union Water Meter Company,		
		Repairing Meters.. .. .		41 50
	9580	R. D. Wood & Co.,		
		Eddy Valves.. .. .		69 00
	9581	Erie Mfg. & Supply Co.,		
		Boiler Compound, Grease, Packing, etc.,.. .. .		86 69
	9582	T. W. Shacklett,		
		Services as Commissioner.. .. .		150 00
	9583	William Hardwick,		
		Services as Commissioner.. .. .		150 00
	9584	Clark Olds,		
		Services as Commissioner.. .. .		150 00
	9585	Pay Roll, Pumping Station,		
		Disbursed by Geo. C. Gensheimer, Ass't Sec'y.. .. .		710 00
	9586	Pay Roll, Office and Inspectors,		
		Disbursed by Geo. C. Gensheimer, Ass't Sec'y.. .. .		866 66
	9587	Lake Shore Foundry,		
		Pipe and Specials.. .. .		4,184 17
Total.. .. .				\$10,017 50

MARCH.**TO PAY VOUCHER.**

Date.	No.	Of	For	Amount.
4	9588	Geo. C. Gensheimer, Ass't Sec'y,		
		Sundries.. .. .	\$	7 36
	9589	Pay Roll, Street Work,		
		Disbursed by M. L. Whitley, Clerk.. .. .		237 35
11	9590	A. V. Fox		
		Repairing Boiler Cart and Horse Shoeing....		4 10
	9591	Conrad J. Brown,		
		Hay.... .. .		15 42
	9592	Geo. C. Gensheimer, Ass't Sec'y,		
		Sundries		18 04
	9593	Dispatch Printing & Engraving Company Ltd.,		
		Printing and Stationery.. .. .		22 50
	9594	Jos. H. King & Co.,		
		Teaming.... .. .		39 31
	9595	F. A. Mizener,		
		Coal		123 73
	9596	Pay Roll, Street Work,		
		Disbursed by M. L. Whitley, Clerk.. .. .		175 47
18	9597	Geo. C. Gensheimer, Ass't Sec'y,		
		Sundries.. .. .		9 96
	9598	Pay Roll, Street Work,		
		Disbursed by M. L. Whitley, Clerk		233 22
	9599	W. P. Mason,		
		Analysis of Water for 1898.. .. .		440 00
25	9600	A. S. Pinney,		
		Hardware and Tools.. .. .		3 54
	9601	New York & Pennsylvania Telephone & Telegraph Co.,		
		Rental of Telephone.. .. .		6 00
	9602	Geo. C. Gensheimer, Ass't Sec'y,		
		Sundries.. .. .		11 00
	9603	A. S. Pinney,		
		Hardware and Tools.. .. .		16 08
	9604	Patrick Doyle,		
		Earth.. .. .		36 00
	9605	Mutual Telephone Company,		
		Rental of Telephones.. .. .		36 00
	9606	Pay Roll, Street Work,		
		Disbursed by M. L. Whitley, Clerk.. .. .		195 32
	9607	Herald Printing & Publishing Co.,		
		Printing and Stationery.. .. .		366 00
Total.. .. .				\$ 1,996 90

APRIL.**TO PAY VOUCHER.**

Date.	No.	Of	For	Amount.
1	9608	The Lake Shore & Michigan Southern Ry. Co.,		
		Freight.. .. .	\$	13 78
	9609	Pay Roll, Street Work,		
		Disbursed by M. L. Whitley, Clerk.. .. .		187 63
	9610	Taylor & Lewis,		
		Repairs to Engine House No. 2.. .. .		343 00

APRIL, Continued.

TO PAY VOUCHER.

Date.	No.	Of	For	Amount.
1	9611	Pay Roll, Pumping Station, Disbursed by Geo. C. Genshelmer, Ass't Sec'y..\$	710 00	
	9612	Pay Roll, Office and Inspectors, Disbursed by Geo. C. Genshelmer, Ass't Sec'y..	866 66	
8	9613	Herald Printing & Publishing Co., Advertising..	3 00	
	9614	Held, Gorenflo & Co., Advertising..	3 50	
	9615	Times Publishing Company, Advertising.	3 75	
	9616	The Dispatch Publishing Company, Advertising..	6 80	
	9617	Geo. C. Genshelmer, Ass't Sec'y, Sundries..	14 40	
	9618	F. P. Gill, Patterns..	226 50	
	9619	F. A. Mizener, Coal	543 87	
	9620	Lake Shore Foundry, Pipe and Specials..	1,825 38	
	9621	Pay Roll, Street Work, Disbursed by M. L. Whitley, Clerk..	292 65	
15	9622	Geo. C. Genshelmer, Ass't Sec'y, Sundries..	7 70	
	9623	The Lake Shore & Michigan Southern Ry. Co., Freight..	18 23	
	9624	Patrick Doyle, Earth..	24 12	
	9625	Martin McCormick, Earth..	50 00	
	9626	Jos. H. King & Co., Teaming..	154 83	
	9627	Pay Roll, Street Work, Disbursed by M. L. Whitley, Clerk..	378 31	
	9628	Lake Shore Foundry, Pipe..	2,306 63	
22	9629	The Erie Gas Company, Coke..	1 10	
	9630	Murphy Bros., Torches, Oil and Can..	1 35	
	9631	The Atlantic Refining Company, Eclipse Station, Oil..	2 63	
	9632	O. C. Thayer & Son, Cement and Lime..	2 90	
	9633	Mehl & Sapper, Hardware and Tools..	2 97	
	9634	C. Kessler, Brooms..	3 00	
	9635	Union Water Meter Company, Meter Cover	3 00	
	9636	Lyman Felhelm, Lumber..	3 01	
	9637	Mehl & Sapper, Hardware and Tools..	3 21	

APRIL, Continued.

TO PAY VOUCHER.

Date.	No.	Of	For	Amount.
22	9638	Warfel & Arbuckle,	Horse Blankets.. .. . \$	3 25
	9639	Skinner Engine Company,	Repairing Oiling Pump.. .. .	3 25
	9640	The Flickinger Roofing and Cornice Co., Limited,	Torches.. .. .	3 28
	9641	Thomson Meter Co.,	Repairing Meter.. .. .	3 35
	9642	Wm. F. Nick & Son,	Brush, Paint and Oil.. .. .	3 80
	9643	C. Kessler,	Soap.. .. .	4 25
	9644	O C Thayer & Son,	Cement.. .. .	4 50
	9645	G. J. Gebhardt,	Coal.. .. .	5 25
	9646	Brown & Thomas,	Iron Rails.. .. .	5 70
	9647	Herald Printing & Publishing Co.,	Stationery.. .. .	6 00
	9648	C. Kessler,	Brooms, Tallow, etc.,.. .. .	6 10
	9649	Lester J. Zuck,	Hardware and Tools.. .. .	6 31
	9650	A. V. Fox,	Horse Shoelng.. .. .	6 40
	9651	Wm. Schade,	Blacksmithing.. .. .	6 45
	9652	Erie Machine Shop,	Tools.. .. .	6 60
	9653	Erie Machine Shop,	Tools and Labor.. .. .	8 32
	9654	Ashby & Vincent,	Stationery.. .. .	8 40
	9655	Constable Bros.,	Repairing Buildings.. .. .	8 98
	9656	Franklin Coal Co.,	Coal.. .. .	11 00
	9657	Keystone Electric Company,	Repairs to Electric Light Plant.. .. .	12 19
	9658	J. M. Dunn,	Brick.. .. .	13 12
	9659	Consumers' Ice & Cold Storage Co.,	Ice.. .. .	13 30
	9660	Wm. Densmore & Co.,	Oats.. .. .	17 75
	9661	Superior Stamp Co.,	Coupon Cutting Stamp.. .. .	18 00
	9662	Wm. Densmore & Co.,	Oats..... .. .	18 50
	9663	E. J. Riblet,	Shop Rent.. .. .	20 00
	9664	Union Water Meter Company,	Meters..... .. .	23 70

APRIL, Continued.

TO PAY VOUCHER.

Date.	No.	Of	For	Amount.
22	9665	John Hamberger,	Insurance Premium.. .. .	\$ 25 00
	9666	Reed Manufacturing Company,	Charging Wagon.. .. .	26 00
	9667	Globe Iron Foundry Co.,	Castings.. .. .	27 74
	9668	Hays Manufacturing Co.,	Fittings.... .. .	28 73
	9669	Robt. T. Walker,	Barn Rent.. .. .	30 00
	9670	Union Water Meter Company,	Meters.. .. .	57 00
	9671	R. D. Wood & Co.,	Valves.. .. .	58 80
	9672	Hays Manufacturing Co.,	Fittings.. .. .	64 70
	9673	Walker Foundry Company,	Castings.. .. .	69 56
	9674	Erie Oil Works,	Oil.... .. .	97 51
	9675	Erie Mfg. & Supply Co.,	Packing, Tools, Valves, etc.,... .. .	114 52
	9676	Keystone Electric Company,	Labor and Material for Electric Light Plant..	115 72
	9677	The Atlantic Refining Company, Eclipse Station,	Oil.. .. .	121 18
	9678	Geo. C. Genshelmer, Ass't Sec'y,	Sundries.. .. .	41 60
	9679	Pay Roll, Street Work,	Disbursed by M. L. Whitley, Clerk.. .. .	397 81
23	9680	T. W. Shacklett,	Services as Commissioner.. .. .	150 00
	9681	William Hardwick,	Services as Commissioner.. .. .	150 00
	9682	Clark Olds,	Services as Commissioner.. .. .	150 00
	9683	The Erie Painting & Decorating Company,	Painting as per Contract.. .. .	259 08
	9684	Pay Roll, Street Work,	Disbursed by M. L. Whitley, Clerk.. .. .	425 60
	9685	Pay Roll, Pumping Station,	Disbursed by Geo. C. Genshelmer, Ass't Sec'y..	710 00
	9686	Pay Roll, Office and Inspectors,	Disbursed by Geo. C. Genshelmer, Ass't Sec'y..	866 66
		Total.. .. .		<u>\$12,237 78</u>

MAY.

TO PAY VOUCHER.

Date.	No.	Of	For	
6	9687	Herald Printing & Publishing Co.,	Advertising.. .. .	\$
	9688	Held, Gorenflo & Co.,	Advertising.. .. .	
	9689	The Engineering News Publishing Co.,	One Year's Subscription.. .. .	
	9690	The Lake Shore & Michigan Southern Ry. Co.,	Freight.. .. .	
	9691	Geo. C. Gensheimer, Ass't Sec'y,	Sundries.. .. .	
	9692	Erie Mfg. & Supply Co.,	Boiler Compound, Waste, etc.,.. .. .	
	9693	Taylor & Lewis,	Repairs to Engine House No. 2.. .. .	
	9694	Pay Roll, Street Work,	Disbursed by M. L. Whitley, Clerk,.. .. .	
	9695	F. A. Mizener,	Coal.. .. .	
13	9696	John F. Culhane,	Plumbing.. .. .	
	9697	Geo. W. Bryan,	Plumbing.. .. .	
	9698	Times Publishing Company,	Advertising.. .. .	
	9699	Wm. F. Nick & Son,	Lead, Paint, Oil, etc.,.. .. .	
	9700	Jarecki Manufacturing Co.,	Fittings.. .. .	
	9701	Wm. F. Nick & Son,	Lead, Paint, Oil, etc.,.. .. .	
	9702	G. J. Gephardt,	Wood.. .. .	
	9703	O. C. Thaver & Son,	Cement.. .. .	
	9704	A. S. Pinney,	Hardware and Tools,.. .. .	
	9705	Mehl & Sapper,	Hardware and Tools.. .. .	
	9706	Geo. C. Gensheimer, Ass't Sec'y,	Sundries.. .. .	
	9707	Erie Machine Shop,	Tools.. .. .	
	9708	Franklin Coal Co.,	Coal.. .. .	
	9709	J. M. Dunn,	Brick.. .. .	
	9710	Pennsylvania Company,	Freight.. .. .	
	9711	Wm. Densmore & Co.,	Oats.. .. .	
	9712	Lake City Machine Shop,	Tools.. .. .	
	9713	Bay State Iron Works,	Repairs to Engine House No. 2.. .. .	

MAY, Continued.

TO PAY VOUCHER.

Date.	No.	Of	For	Amount.
13	9714	Jas. L. Firman,		
		Teamings.. .. .	\$	30 13
	9715	Knowlton Packing Company,		
		Packing.. .. .		39 28
	9716	Globe Iron Foundry Co.,		
		Castings.. .. .		39 33
	9717	Walker Foundry Co.,		
		Castings.. .. .		55 00
	9718	Hays Manufacturing Co.,		
		Fittings.. .. .		68 28
	9719	Baas & Althof,		
		Repairs to Engine House No. 2.. .. .		72 42
	9720	Union Water Meter Company,		
		Meters.. .. .		114 00
	9721	The Atlantic Refining Company, Eclipse Station,		
		Oil.. .. .		128 68
	9722	Constable Bros.,		
		Labor and Material on Buildings.. .. .		180 24
	9723	The E. W. Van Dusen Co.,		
		Pump and Strainer.. .. .		44 00
	9724	Pay Roll, Street Work,		
		Disbursed by M. L. Whitley, Clerk.. .. .		452 59
20	9725	Held, Gorenflo & Co.,		
		Advertising.. .. .		2 00
	9726	The National Carbon Co.,		
		Carbons.. .. .		22 27
	9727	The Lake Shore & Michigan Southern Ry. Co.,		
		Freight.. .. .		54 19
	9728	Geo. C. Gensheimer, Ass't Sec'y,		
		Sundries.. .. .		64 32
	9729	Pay Roll, Street Work,		
		Disbursed by M. L. Whitley, Clerk		408 91
27	9730	Edison Construction & Supply Department,		
		Electric Light Supplies.. .. .		1 04
	9731	The Erie Gas Company,		
		Coke.. .. .		1 77
	9732	The Atlantic Refining Company, Eclipse Station,		
		Oil.. .. .		2 50
	9733	J. H. Braggins,		
		Labor, Brass Bands, etc.,		3 03
	9734	O. C. Thayer & Son,		
		Cement.. .. .		3 30
	9735	F. A. Sherrer,		
		Cutting Stone,.. .. .		3 50
	9736	Lester J. Zuck,		
		Tools.. .. .		4 00
	9737	C. Kessler,		
		Soap and starch.. .. .		4 45
	9738	Erie Machine Shop,		
		Repairs to Drinking Fountain.. .. .		5 70
	9739	Mehl & Sapper,		
		Hardware and Tools.. .. .		6 19
	9740	Henry Beckman & Son,		
		Clover Seed.. .. .		6 50

MAY, Continued.

TO PAY VOUCHER.

Date.	No.	Of	For	Amount.
27	9741	A. S. Pinney,		
		Hardware and Tools.. .. .	\$	7 17
	9742	A. V. Fox,		
		Horse Shoeing.. .. .		8 40
	9743	Keystone Electric Company,		
		Repairs to Electric Light Plant.. .. .		11 25
	9744	Jarecki Manufacturing Co.,		
		Fittings.. .. .		11 86
	9745	Erle Window Glass Co.,		
		Glass and Paint.. .. .		13 45
	9746	David Schlosser & Son,		
		Lumber.. .. .		14 91
	9747	Bay State Iron Works,		
		Repairs to Engine House No. 2.. .. .		15 77
	9748	E. J. Riblet,		
		Shop Rent.. .. .		20 00
	9749	Baas & Althof,		
		Repairs to Engine House No. 3.. .. .		32 35
	9750	Lyman Felhelm,		
		Lumber and Meter Box.. .. .		33 84
	9751	Herald Printing & Publishing Co.,		
		Stationery and Printing		46 21
	9752	The Lake Shore & Michigan Southern Ry. Co.,		
		Freight.. .. .		86 74
	9753	Erie Mfg. & Supply Co.,		
		Boiler Compound, Packing, etc.,... .. .		106 76
	9754	Erie Oil Works,		
		Oil.. .. .		111 49
	9755	Keystone Brass Works,		
		Repairs to Engine House No. 2.. .. .		247 45
	9756	Hays Manufacturing Co.,		
		Fittings and Pipe.. .. .		452 71
	9757	Jarecki Manufacturing Co.,		
		Pipe.. .. .		512 85
	9758	Geo. C. Gensheimer, Ass't Sec'y,		
		Sundries.. .. .		26 16
	9759	Pay Roll, Street Work,		
		Disbursed by M. L. Whitley, Clerk,		528 10
	9760	The Constable Bros., Co.,		
		Labor and material on Buildings.. .. .		71 55
29	9761	T. H. Brooks & Co.,		
		Repairs to Engine House No. 2.. .. .		726 31
Total.. .. .				\$ 6,174 12

JUNE.

TO PAY VOUCHER.

Date.	No.	Of	For	Amount.
1	9762	Pay Roll, Pumping Station,		
		Disbursed by Geo. C. Genshelmer, Ass't Sec'y..	\$	710 00
	9763	Pay Roll, Office and Inspectors,		
		Disbursed by Geo. C. Genshelmer, Ass't Sec'y..		866 66
3	9764	Geo. C. Genshelmer, Ass't Sec'y,		
		Sundries..		4 94
	9765	Pay Roll, Street Work,		
		Disbursed by M. L. Whitley, Clerk,.. . . .		536 00
10	9766	James L. Firman,		
		Teaming..		15 90
	9767	The Lake Shore & Michigan Southern Ry. Co.,		
		Freight..		55 80
	9768	F. A. Mizener,		
		Coal..		88 74
	9769	Pay Roll, Street Work,		
		Disbursed by M. L. Whitley, Clerk.. . . .		655 13
	9770	U. Jackson,		
		Whitewashing Fence..		15 00
	9771	Geo. C. Genshelmer, Ass't Sec'y,		
		Sundries..		191 72
15	9772	James Vernon,		
		On Contract for Retaining Wall.. . . .		50 00
17	9773	Skinner Engine Company,		
		Repairs Engine House No. 3.. . . .		1 69
	9774	The Sunday Messenger Publishing Co.,		
		Advertising..		1 90
	9775	Franklin Coal Co.,		
		Wood....		2 00
	9776	Herald Printing & Publishing Co.,		
		Advertising..		2 00
	9777	J. Jacobs.		
		Oil Suit..		2 25
	9778	Murphy Bros.,		
		Tools..		2 40
	9779	Geo. Schlindwein,		
		Repairing Harness..		3 10
	9780	The Erie Gas Company,		
		Coke..		3 09
	9781	Lake Shore Brick Works,		
		Brick..		3 36
	9782	C Kessler,		
		Brooms and Soap..		4 13
	9783	A. V. Fox,		
		Horse Shoeing..		4 80
	9784	Erie Machine Shop.		
		Tools..		4 90
	9785	Erie City Iron Works,		
		Boiler Repairs..		5 35
	9786	Jarecki Manufacturing Co.,		
		Repairs Engine House No. 3.. . . .		6 25
	9787	Keystone Electric Company.		
		Repairs Electric Light Plant.. . . .		7 10
	9788	Henry Beckman & Son,		
		Clover Seed..		7 50

JUNE, Continued.

TO PAY VOUCHER.

Date.	No.	Of	For	Amount.
17	9789	A. S. Nelson,	Pattern Work.. .. .	\$ 10 50
	9790	A. S. Pinney,	Hardware and Tools.. .. .	12 38
	9791	Wm. Schade,	Blacksmithing and Tools.. .. .	13 39
	9792	Mehl & Sapper,	Hardware and Tools.. .. .	13 53
	9793	J. M. Dunn,	Brick.. .. .	13 75
	9794	South Erie Iron Works,	Castings.. .. .	14 62
	9795	Erie Steam Bending Works,	Stakes.. .. .	15 00
	9796	Wm. F. Nick & Son,	Oil, Paint and Varnish.. .. .	15 90
	9797	Robert Serr,	Labor.. .. .	16 50
	9798	The Dispatch Publishing Company,	Advertising	17 80
	9799	Times Publishing Company,	Advertising and Printing	18 90
	9800	E. J. Riblet,	Shop Rent,.... .. .	20 00
	9801	David Schlosser & Sons,	Lumber.. .. .	21 02
	9802	Henry R. Worthington,	Repairs Engine No. 4.. .. .	22 50
	9803	O. C. Thaver & Son,	Cement and Pipe.. .. .	25 42
	9804	The Flickinger Roofing and Cornice Co., Ltd.,	Copper Pans and Iron Falls.. .. .	29 36
	9805	Globe Iron Foundry Co.,	Castings.. .. .	43 41
	9806	The Lake Shore & Michigan Southern Ry. Co.,	Freight.. .. .	64 29
	9807	The Dispatch Printing & Engraving Company, Ltd.,	Printing and Stationery.. .. .	75 00
	9808	Lyman Feiheim,	Lumber.. .. .	86 34
	9809	Atlantic Refining Company, Eclipse Station,	Oil.. .. .	104 19
	9810	Erie Mfg. & Supply Co.,	Gaskets, Gauge Glasses, Valves, etc.,... .. .	202 43
	9811	Hays Manufacturing Co.,	Fittings and Pipe.. .. .	229 45
	9812	Pay Roll, Street Work,	Disbursed by M. L. Whitley, Clerk.. .. .	661 08
24	9813	Geo. C. Genshelmer, Ass't Sec'y,	Sundries.. .. .	4 10
	9814	New York & Penn'a. Telephone & Telegraph Co.,	Rental of Telephone.. .. .	6 00
	9815	Mutual Telephone Company,	Rental of Telephones.. .. .	36 00

JUNE, Continued.**TO PAY VOUCHER.**

Date.	No.	Of	For	Amount.
24	9816	Pay Roll, Street Work,		
		Disbursed by M. L. Whitley, Clerk..	.. .. .	\$ 645 19
29	9817	N. Murphy,		
		Specifications for Stand Pipe..	.....	10 00
	9818	The Lake Shore & Michigan Southern Ry. Co.,		
		Freight..	.. .. .	61 05
	9819	Pay Roll, Pumping Station,		
		Disbursed by Geo. C. Genshelmer, Ass't Sec'y..		660 00
	9820	Pay Roll, Office and Inspectors,		
		Disbursed by Geo. C. Genshelmer, Ass't Sec'y..		866 66
Total..				\$ 7,287 47

JULY.**TO PAY VOUCHER.**

Date.	No.	Of	For	Amount.
1	9821	D. Shields,		
		Labor..	.. .. .	\$ 3 75
	9822	Thos. Pickering,		
		Livery..	.. .. .	4 00
	9823	Wm. Richter,		
		Labor..	.. .. .	5 25
	9824	Geo. C. Genshelmer, Ass't Sec'y,		
		Sundries..	.. .. .	5 86
	9825	F. E. Jeffrey,		
		Labor..	.. .. .	9 30
	9826	Clark Olds,		
		Services as Commissioner..	.. .. .	150 00
	9827	William Hardwick		
		Services as Commissioner..	.. .. .	150 00
	9828	T. W. Shacklett,		
		Services as Commissioner..	.. .. .	150 00
	9829	Pay Roll, Street Work,		
		Disbursed by M. L. Whitley, Clerk..	.. .. .	645 24
	9830	James Vernon,		
		On Contract for Retaining Wall..	.. .. .	500 00
8	9831	Jos. Jehle,		
		Rolled Oats..	.. .. .	1 00
	9832	Not Issued.		
	9833	O. C. Thaver & Son,		
		Cement..	.. .. .	2 10
	9834	R. T. Williams & Co.,		
		Repairing Connection..	.. .. .	2 40
	9835	C. Flickinger,		
		Tools..	.. .. .	2 91
	9836	Herald Printing & Publishing Co.,		
		Blank Book..	.. .. .	3 00
	9837	Campbell & Dunn,		
		Repairing Connection..	.. .. .	3 22
	9838	Erie Heating & Plumbing Co.,		
		Soil Pipe..	.. .. .	4 45

JULY, Continued.

TO PAY VOUCHER.

Date.	No.	Of	For	Amount.
8	9839	A. V. Fox,		
		Horse Shoeing..	\$	5 20
	9840	Globe Iron Foundry Co.,		
		Castings..		5 39
	9841	The Atlantic Refining Company, Eclipse Station,		
		Oil..		6 00
	9842	A. J. Louch,		
		Rope..		8 75
	9843	The Erie Gas Company,		
		Coke..		10 29
	9844	Henry Beckman & Sons,		
		Clover Seed, Wire Rope, etc.,..		10 95
	9845	Walker Foundry Company,		
		Castings..		11 06
	9846	Keystone Electric Company,		
		Repairing Electric Light..		11 10
	9847	Erie Window Glass Co.,		
		Paints and Oil..		12 60
	9848	J. M. Dunn,		
		Brick..		17 60
	9849	E. J. Riblet,		
		Shop Rent..		20 00
	9850	Wm. Densmore & Co.,		
		Oats..		20 00
	9851	Wm. F. Nick & Son,		
		Paints and Oil..		22 96
	9852	Mehl & Sapper,		
		Hardware and Tools..		24 25
	9853	A. S. Pinney,		
		Hardware and Tools..		28 29
	9854	South Erie Iron Works,		
		Castings..		30 90
	9855	Lyman Felhelm,		
		Lumber..		35 58
	9856	Wm. Schade,		
		Blacksmithing and Tools..		37 88
	9857	Geo. C. Gensheimer, Ass't Sec'y,		
		Sundries..		41 00
	9858	Erie Steam Bending Works,		
		Stakes..		43 00
	9859	Knowlton Packing Company,		
		Packing..		43 69
	9860	The Flickinger Roofing & Cornice Co., Ltd.,		
		Sheet Copper, Labor, etc.,..		61 55
	9861	James L. Firman,		
		Teaming..		103 58
	9862	Erie Oil Works,		
		Oil..		114 91
	9863	F. A. Mizener,		
		Coal..		161 28
	9864	Erie Mfg. & Supply Co.,		
		Check Valves, Waste, etc..		204 41
	9865	R. D. Wood & Co.,		
		Fire Hydrants..		325 68

JULY, Continued.

TO PAY VOUCHER.

Date.	No.	Of	For	Amount.
8	9866	Momeyer & Graf.		
		Coal.. .. .	.. \$	544 98
	9867	Pay Roll, Street Work,		
		Disbursed by M. L. Whitley, Clerk.. .. .		561 02
	9868	Kraft & Walther,		
		Cement.. .. .		2 30
	9869	James Vernon,		
		On Contract for Retaining Wall.. .. .		72 16
13	9870	Jno. Wahl Commission Co.,		
		Pig Lead.. .. .		1,313 55
15	9871	Pay Roll, Street Work,		
		Disbursed by Jno. Kolb, Bookkeeper.. .. .		589 42
22	9872	Mrs. N. Block,		
		Washing Towels & Flags.. .. .		6 00
	9873	Henry A. Neimeyer,		
		Flower Beds.. .. .		43 00
	9874	Pay Roll Street Work,		
		Disbursed by Jno. Kolb, Bookkeeper.. .. .		490 75
	9875	E. A. White,		
		Painting per Contract.. .. .		142 00
29	9876	Wm. Kreuger,		
		Repairing Pavement.. .. .		12 73
	9877	Pay Roll Street Work,		
		Disbursed by M. L. Whitley, Clerk.. .. .		546 25
Total.. .. .				\$ 7,384 54

AUGUST.

TO PAY VOUCHER.

Date.	No.	Of	For	Amount.
1	9878	Pay Roll, Office and Inspectors,		
		Disbursed by Geo. C. Genshelmer, Ass't Sec'y.. \$		866 66
	9879	Pay Roll, Pumping Station,		
		Disbursed by Geo. C. Genshelmer, Ass't Sec'y..		660 00
5	9880	C. O'Callaghan, Sealer Weights and Measures,		
		Testing Scales.. .. .		2 66
	9881	Anchor Line,		
		Freight.. .. .		30 02
	9882	Pay Roll, Street Work,		
		Disbursed by M. L. Whitley, Clerk.. .. .		497 90
	9883	Geo. C. Genshelmer, Ass't Sec'y,		
		Sundries.. .. .		32 12
	9884	Henry R. Worthington,		
		On Account Pumping Engine.. .. .		10,000 00
	9885	United States Cast Iron Pipe & Foundry Co.,		
		Pipe and Specials.. .. .		5,366 39
12	9886	J. Bryce,		
		Livery.. .. .		1 50
	9887	J. N. Blaisdell,		
		Setting Tires.. .. .		2 00

AUGUST, Continued.

TO PAY VOUCHER.

Date.	No	Of	For	Amount.
12	9888	Geo. Schlindwein,		
		Repairing Harness.. .. .	\$	2 00
	9889	The Transfer Limited,		
		Draying.. .. .		2 00
	9890	Jarecki Manufacturing Co.,		
		Fittings.. .. .		2 01
	9891	South Erie Iron Works,		
		Castings		2 25
	9892	Gus J. Miller		
		Brushes, Sponge, etc.,.. .. .		4 15
	9893	Henry Beckman & Sons,		
		Clover Seed.. .. .		4 48
	9894	A. V. Fox,		
		Horse Shoeing.. .. .		4 80
	9895	A. S. Pinney,		
		Packing and Tools.. .. .		4 86
	9896	The Erie Gas Co.,		
		Coke.. .. .		5 73
	9897	Times Publishing Company,		
		Advertising.. .. .		5 75
	9898	Held, Gorenflo & Co.,		
		Advertising.. .. .		6 00
	9899	Herald Printing & Publishing Co.,		
		Advertising.		6 00
	9900	J. M. Dunn,		
		Brick.. .. .		6 60
	9901	Merchants and Manufacturers E. L., H., & P. Co.,		
		Repairing Electric Light Fixtures in Office....		7 61
	9902	Mehl & Sapper,		
		Hardware and Tools.. .. .		8 34
	9903	Kramer & Co.,		
		Electric Light Fixtures at Engine House.. .. .		8 39
	9904	Adolph Brugger,		
		Wooden Plugs.. .. .		8 40
	9905	The Dispatch Publishing Company,		
		Advertising		9 50
	9906	O. C. Thayer & Son,		
		Cement & Lime.. .. .		9 60
	9907	G. J. Gebhardt,		
		Coal and Wood.. .. .		9 85
	9908	Consumers Ice & Cold Storage Co.,		
		Ice.. .. .		11 50
	9909	C. Kessler,		
		Baskets, Soap, Pails, etc.,.... .. .		11 65
	9910	Wm. Densmore & Co.,		
		Oats.. .. .		19 00
	9911	Conrad J. Brown,		
		Hay.. .. .		19 10
	9912	E. J. Riblet,		
		Shop Rent.. .. .		20 00
	9913	James L. Firman,		
		Teaming.... .. .		20 36
	9914	Ashby & Vincent,		
		Books and Stationery.. .. .		25 61

AUGUST, Continued.

TO PAY VOUCHER.

Date.	No.	Of	For	Amount.
12	9915	David Schlosser & Sons,		
		Lumber.. .. .	\$	32 74
	9916	The Flickinger Roofing & Cornice Co., Ltd.,		
		Brass, Copper and Labor.. .. .		37 60
	9917	Erie Steam Bending Works,		
		Stakes and Lumber.. .. .		47 00
	9918	Union Water Meter Company,		
		Meters.. .. .		60 00
	9919	Globe Iron Foundry Co.,		
		Castings.. .. .		70 76
	9920	Erie Mfg. & Supply Co.,		
		Packing, Valves, Waste, etc.,.. .. .		120 04
	9921	Mayer Bros.,		
		Repairing Pavements.. .. .		120 19
	9922	R. D. Wood & Co.,		
		Valves.. .. .		129 00
	9923	The Atlantic Refining Company, Eclipse Station,		
		Oil.. .. .		148 79
	9924	Union Water Meter Company,		
		Meters and Repairs.. .. .		188 25
	9925	Hays Manufacturing Co.,		
		Fittings and Pipe.. .. .		189 97
	9926	Edison Construction & Supply Department,		
		Labor and material Electric Plant.... .. .		205 41
	9927	Hays Manufacturing Co.,		
		Hydrants, Fittings and Pipe.. .. .		237 27
	9928	Momeyer & Graf,		
		Coal.. .. .		360 19
	9929	R. D. Wood & Co.,		
		Valves.. .. .		492 90
	9930	Pay Roll, Street Work,		
		Disbursed by M. L. Whitley, Clerk.. .. .		517 20
19	9931	Geo. C. Genshelmer, Ass't Sec'y,		
		Sundries.. .. .		8 10
	9932	R. T. Williams & Co.,		
		Plumbing Material and Labor.. .. .		52 81
	9933	Globe Iron Foundry Co.,		
		Castings.. .. .		117 80
	9934	James Vernon,		
		Retaining Wall.. .. .		298 93
	9935	Pay Roll, Street Work,		
		Disbursed by M. L. Whitley, Clerk.. .. .		426 05
26	9936	The Lake Shore & Michigan Southern Ry. Co.,		
		Freight.. .. .		41 74
	9937	Pay Roll Street Work,		
		Disbursed by John Kolb, Bookkeeper.. .. .		471 12
		Total.. .. .	\$	22,078 75

SEPTEMBER,

TO PAY VOUCHER.

Date.	No.	Of	For	Amount.
1	9938	Ohio Varnish Co.,		
		Turpentine.. .. .	\$	25 46
	9939	National Carbon Co.,		
		Carbons.. .. .		27 22
	9940	Clark Olds,		
		Services as Commissioner.. .. .		150 00
	9941	William Hardwick,		
		Services as Commissioner.. .. .		150 00
	9942	T. W. Shacklett,		
		Services as Commissioner		150 00
	9943	Pay Roll, Street Work,		
		Disbursed by John Kolb, Bookkeeper.. .. .		481 76
	9944	Pay Roll, Pumping Station,		
		Disbursed by Geo. C. Gensheimer, Ass't Sec'y..		655 03
	9945	Pay Roll, Office and Inspectors,		
		Disbursed by Geo. C. Gensheimer, Ass't Sec'y..		851 66
2	9946	Geo. C. Gensheimer, Ass't Sec'y,		
		Sundries.. .. .		4 89
	9947	Pennsylvania Company,		
		Freight.. .. .		25 54
	9948	E. J. Morton,		
		Services.. .. .		34 00
9	9949	Lyman Felheim,		
		Lumber.. .. .		2 00
	9950	Herald Printing & Publishing Co.,		
		Blue Print Paper.. .. .		2 25
	9951	G. J. Gebhardt,		
		Wood.. .. .		2 25
	9952	Ashby & Vincent,		
		Book and Stationery.. .. .		2 25
	9953	Murphy Bros.,		
		Tools.. .. .		2 30
	9954	Union Water Meter Company,		
		Rotary Register.. .. .		3 00
	9955	J. N. Blaisdell,		
		Horse Shoeing		3 20
	9956	F. Neubauer,		
		Material Engine No. 5.. .. .		3 30
	9957	The Flickinger Roofing & Cornice Co., Ltd.,		
		Material Engine No. 5.. .. .		3 33
	9958	Consumers' Ice & Cold Storage Co.,		
		Ice.. .. .		3 40
	9959	The Atlantic Refining Company, Eclipse Station,		
		Oil.. .. .		3 85
	9960	Mehl & Sapper,		
		Hardware and Tools.. .. .		3 88
	9961	The Erie Gas Company,		
		Coke.. .. .		4 28
	9962	A. V. Fox,		
		Horse Shoeing.. .. .		4 30
	9963	R. D. Wood, & Co.,		
		Fire Hydrant Repairs... .. .		4 96
	9964	O. C. Thayer & Son,		
		Cement.. .. .		5 20

SEPTEMBER, Continued.

TO PAY VOUCHER.

Date.	No.	Of	For	Amount.
9	9965	The New York & Penn'a. Telephone & Telegraph Co.,		
		Rental of Telephone..	\$	6 00
	9966	Emil Streuber,		
		Sole Leather..		7 02
	9967	J. M. Dunn,		
		Brick..		8 25
	9968	Brown & Thomas,		
		Iron Rail..		9 00
	9969	C. Kessler,		
		Brooms, Soap, Lamp Wicks, etc..		9 39
	9970	Wm F. Nick & Son,		
		Oil and Paint..		9 49
	9971	Erie Machine Shop,		
		Repairing Engine and Tools..		11 23
	9972	Thomson Meter Co.,		
		Meter, etc.,..		12 60
	9973	A. S. Pinney,		
		Hardware and Tools..		13 18
	9974	Jarecki Manufacturing Co.,		
		Fittings and Hydrants..		13 74
	9975	Wm. Densmore & Co.,		
		Oats..		38 00
	9976	E. J. Riblet,		
		Rent of Shop..		20 00
	9977	The Lake Shore & Michigan Southern Ry. Co.,		
		Freight..		20 61
	9978	The Holly Manufacturing Company,		
		Valve Cages..		35 20
	9979	The Hlmrod Engraving Company,		
		Stationery..		37 00
	9980	Pennsylvania Company,		
		Freight..		38 22
	9981	Knowlton Packing Company,		
		Packing..		57 56
	9982	Globe Iron Foundry Co.,		
		Castings..		66 49
	9983	Hays Manufacturing Co.,		
		Fittings..		86 87
	9984	James L. Firman,		
		Teaming..		105 38
	9985	Erie Oil Works,		
		Oil..		118 05
	9986	Erie Mfg. & Supply Co.,		
		Valves, Packing, Waste, etc.,..		155 95
	9987	Pay Roll, Street Work,		
		Disbursed by M. L. Whitley, Clerk..		425 14
	9988	United States Cast Iron Pipe & Foundry Co.,		
		Pipe and Specials..		3,623 69
	9989	James Vernon,		
		On Account Stone Steps..		200 00
	9990	Momeyer & Graf,		
		Coal..		695 50
16	9991	William Wilson,		
		Services of Tug Kate Wilson..		5 00

SEPTEMBER, Continued.

TO PAY VOUCHER.

Date.	No.	Of	For	Amount.
16	9992	Pay Roll, Street Work.		
		Disbursed by M. L. Whitley, Clerk..	.. .. .	\$ 466 49
	9993	James Vernon,		
		Stone and Labor..	.. .. .	587 23
23	9994	Mutual Telephone Company,		
		Rental of Telephones..	.. .. .	36 00
	9995	Pay Roll, Street Work,		
		Disbursed by M. L. Whitley, Clerk..	.. .. .	481 89
	9996	Erie Elastic Japan Roofing Co.,		
		Painting Tin Roofs..	.. .. .	83 57
30	9997	The Henesey Mfg. Co.,		
		Leather Washers..	.. .. .	7 84
	9998	Geo. C. Gensheimer, Ass't. Sec'y,		
		Sundries..	.. .. .	29 13
	9999	Pay Roll, Street Work,		
		Disbursed by M. L. Whitley, Clerk..	.. .. .	341 07
10000		Pay Roll, Pumping Station,		
		Disbursed by Geo. C. Gensheimer, Ass't Sec'y..		736 67
10001		Pay Roll, Office and Inspectors,		
		Disbursed by Geo. C. Gensheimer, Ass't Sec'y..		866 66
Total..				\$12,075 42

OCTOBER.

TO PAY VOUCHER.

Date.	No.	Of	For	Amount.
3	10002	The Lake Shore & Michigan Southern Ry. Co.,		
		Freight..	.. .. .	\$ 43 18
6	10003	Raymond Lead Co.,		
		Pig Lead..	.. .. .	1,346 44
7	10004	Geo. C. Gensheimer, Ass't Sec'y,		
		Sundries..	.. .. .	17 13
	10005	Pay Roll, Street Work,		
		Disbursed by M. L. Whitley, Clerk..	.....	367 93
14	10006	J. H. Braggins,		
		Labor and Iron..	.. .. .	2 17
	10007	G. J. Gebhardt,		
		Wood..	.. .. .	2 25
	10008	Pennsylvania Company,		
		Oak Ties..	.. .. .	3 48
	10009	Consumers' Ice & Cold Storage Co.,		
		Ice..	.. .. .	3 75
	10010	The Erie Gas Company,		
		Coke..	.. .. .	4 50
	10011	C. A. Taylor,		
		Horse Shoeing..	.. .. .	4 80
	10012	Ashby & Vincent,		
		Books and Stationery..	.. .. .	5 40
	10013	Globe Iron Foundry Co.		
		Castings..	.. .. .	5 62

OCTOBER, Continued.

TO PAY VOUCHER.

Date.	No.	Of	For	Amount.
14	10014	Mehl & Sapper,		
		Hardware and Tools..	.. .. .	\$ 6 12
	10015	O. C. Thayer & Son,		
		Cement..	.. .. .	6 60
	10016	W. N. Durant,		
		Counter..	.. .. .	9 00
	10017	Erie Heating & Plumbing Co.,		
		Plumbing Material..	.. .. .	10 51
	10018	A. S. Pinney,		
		Hardware and Tools..	.. .. .	10 70
	10019	Lake Shore Brick Works,		
		Brick..	.. .. .	11 15
	10020	Conrad J. Brown,		
		Hay..	.. .. .	11 40
	10021	The Flickinger Roofing & Cornice Co., Ltd.,		
		Labor and Iron..	.. .. .	12 65
	10022	J. M. Dunn,		
		Brick..	.. .. .	15 35
	10023	Baas & Althof,		
		Window Guards..	.. .. .	15 60
	10024	Jas. McCrea & Co.,		
		Steam Joint Clamp..	.. .. .	16 88
	10025	Wm. Densmore & Co.,		
		Oats..	.. .. .	17 50
	10026	Wm. Schade,		
		Tools and Repairs..	.. .. .	18 35
	10027	South Erie Iron Works,		
		Castings..	.. .. .	18 50
	10028	E. J. Riblet,		
		Shop Rent and Cupboard,..	.. .. .	26 00
	10029	Union Ice Company,		
		Ice..	.. .. .	32 37
	10030	Skinner Engine Company,		
		Coal Truck..	.. .. .	40 00
	10031	Erie Steam Bending Works,		
		Stakes..	.. .. .	45 00
	10032	Keystone Electric Company,		
		Repairs to Electric Light Plant..	.. .. .	51 85
	10033	D. Long, (Collector),		
		Taxes in 6th Ward..	.. .. .	59 75
	10034	Mayer Bros.,		
		Repairing Cuts in Pavement..	.. .. .	82 19
	10035	Union Water Meter Company,		
		Meters and Repairs..	.. .. .	111 85
	10036	The Constable Brothers Company,		
		Labor and Material on Buildings..	.. .. .	121 06
	10037	Henry R. Worthington,		
		Accumulator Pump and Valves....	.. .. .	139 80
	10038	The Atlantic Refining Company, Eclipse Station,		
		Oil..	.. .. .	146 49
	10039	Erie Mfg. & Supply Co.,		
		Gaskets, Valves, Waste, etc.,..	.. .. .	171 85
	10040	Henry Herbst, Collector,		
		Taxes in 4th Ward..	.. .. .	218 75

OCTOBER, Continued.

TO PAY VOUCHER.

Date.	No.	Of	For	Amount.
14	10041	Erie Machine Shop,		
		Engine Repairs and Tools.. .. .	\$	233 73
	10042	Hays Manufacturing Co.,		
		Fittings and Pipe.. .. .		436 30
	10043	Momeyer & Graf,		
		Coal.. .. .		600 44
	10044	United States Cast Iron Pipe & Foundry Co.,		
		Pipe.. .. .		1,349 92
	10045	Geo. C. Gensheimer, Ass't Sec'y,		
		Sundries.. .. .		9 24
	10046	Trask, Prescott & Richardson,		
		Linoleum and Matting.. .. .		47 58
	10047	James L. Firman,		
		Teaming.. .. .		88 79
	10048	The Lake Shore & Michigan Southern Ry. Co.,		
		Freight.. .. .		124 40
	10049	R. D. Wood & Co.,		
		Fire Hydrants.. .. .		156 00
	10050	Pay Roll, Street Work,		
		Disbursed by M. L. Whitley, Clerk.. .. .		491 37
21	10051	Geo. C. Gensheimer, Ass't Sec'y,		
		Sundries.. .. .		7 50
	10052	The Lake Shore & Michigan Southern Ry. Co.,		
		Freight.. .. .		108 21
	10053	Pay Roll, Street Work,		
		Disbursed by M. L. Whitley, Clerk.. .. .		568 00
	10054	Henry R. Worthington,		
		On Account Engine No. 5.. .. .		5,156 27
28	10055	Geo. C. Gensheimer, Ass't Sec'y,		
		Sundries		8 80
	10056	National Carbon Co.,		
		Carbons.. .. .		54 45
	10057	Ashby & Vincent,		
		Books.. .. .		126 00
	10058	William Hardwick,		
		Services as Commissioner.. .. .		150 00
	10059	T. W. Shacklett,		
		Services as Commissioner.. .. .		150 00
	10060	Clark Olds,		
		Services as Commissioner.. .. .		150 00
	10061	The Lake Shore & Michigan Southern Ry. Co.,		
		Freight.. .. .		174 52
	10062	Pay Roll, Street Work,		
		Disbursed by M. L. Whitley, Clerk.. .. .		643 41
	10063	Pay Roll, Pumping Station,		
		Disbursed by Geo. C. Gensheimer, Ass't Sec'y..		755 00
	10064	Pay Roll, Office and Inspectors,		
		Disbursed by Geo. C. Gensheimer, Ass't Sec'y..		866 66
Total.. .. .				\$15,690 54

NOVEMBER.

TO PAY VOUCHER.

Date.	No.	Of	For	Amount.
1	10065	Pennsylvania Company,	Freight.. .. .	\$ 23 94
4	10066	Geo. C. Gensheimer, Ass't Sec'y,	Sundries.. .. .	7 83
	10067	Frank Thayer,	Sod.. .. .	61 82
	10068	The Lake Shore & Michigan Southern Ry. Co.,	Freight.. .. .	67 70
	10069	Pay Roll, Street Work,	Disbursed by M. L. Whitley, Clerk.. .. .	617 94
11	10070	Henry Beckman & Sons,	Grass Seed.. .. .	1 40
	10071	Consumers' Ice & Cold Storage Co.,	Ice.. .. .	1 10
	10072	Murphy Bros.,	Tools.. .. .	1 50
	10073	G. J. Gebhardt,	Wood.. .. .	2 25
	10074	Keystone Electric Company,	Carbon Brushes and Cord.. .. .	3 90
	10075	Times Publishing Company,	Advertising.. .. .	4 50
	10076	Wm. F. Nick & Son,	Oil, Paint and Turpentine.. .. .	4 85
	10077	A. S. Pinney,	Hardware and Tools.. .. .	5 03
	10078	C. A. Tavior,	Horse Shoeing and Clip.... .. .	5 05
	10079	Lyman Felhelm,	Meter Box.. .. .	5 35
	10080	Erie Window Glass Co.,	Glass and Paint.. .. .	5 56
	10081	New York & Penn'a. Telephone & Telegraph Co.,	Telephone Rental.. .. .	6 00
	10082	Herald Printing & Publishing Co.,	Advertising	6 60
	10083	Ashby & Vincent,	Book and Stationery.. .. .	7 60
	10084	Adolph Brugger,	Wooden Plugs.. .. .	9 55
	10085	A. J. Louch,	Canvas and Hose.. .. .	10 00
	10086	The Atlantic Refining Company, Eclipse Station,	Oil.. .. .	11 03
	10087	C. Kessler,	Soap, Tallow, etc.... .. .	13 95
	10088	Mehl & Sapper,	Hardware and Tools.. .. .	14 78
	10089	The Erie Gas Company,	Coke.. .. .	16 46
	10090	Wm. Densmore & Co.,	Oats.. .. .	17 50
	10091	Erie Steam Bending Works,	Stakes	21 00

NOVEMBER, Continued.

TO PAY VOUCHER.

Date.	No	Of	For	Amount.
11	10092	E. J. Riblet,		
		Shop Rent, and Chairs.. .. .	\$	22 50
	10093	Edison Construction & Supply Department,		
		Carbons, Globes, etc.,.. .. .		22 29
	10094	O. C. Thayer & Son,		
		Cement.. .. .		24 53
	10095	The Fairbanks Company,		
		Repairing Valve.. .. .		26 87
	10096	Titus Berst,		
		Floral Decorations.. .. .		29 75
	10097	Robt. T. Walker,		
		Barn Rent, 6 months.. .. .		30 00
	10098	National Meter Company,		
		Repairing Meters		34 00
	10099	J. M. Dunn,		
		Brick		42 00
	10100	Erie City Iron Works,		
		Boiler Repairs.. .. .		44 25
	10101	The Crandall Fence & Iron Co.,		
		Iron Settees.. .. .		54 50
	10102	Erie Oil Works,		
		Oil.. .. .		77 25
	10103	Globe Iron Foundry Co.,		
		Castings.. .. .		109 35
	10104	Erie Mfg. & Supply Co.,		
		Grease, Packing, Tools, etc.,.. .. .		163 22
	10105	Hays Manufacturing Co.,		
		Fittings..... .. .		176 08
	10106	Momeyer & Graf,		
		Coal.. .. .		452 06
	10107	James L. Firman,		
		Teaming and Hay.. .. .		93 89
	10108	Geo. C. Gensheimer, Ass't Sec'y,		
		Sundries.. .. .		29 29
	10109	Globe Iron Foundry Co.,		
		Castings.. .. .		143 07
	10110	Pay Roll, Street Work,		
		Disbursed by M. L. Whitley, Clerk.. .. .		745 71
	10111	Mich'l McMahon,		
		Old Rope.. .. .		24 78
13	10112	Geo. C. Gensheimer, Ass't Sec'y,		
		Sundries.. .. .		6 15
	10113	The Lake Shore & Michigan Southern Ry. Co.,		
		Freight.. .. .		74 00
	10114	Pay Roll, Street Work,		
		Disbursed by M. L. Whitley, Clerk.. .. .		683 27
25	10115	The Lake Shore & Michigan Southern Ry. Co.,		
		Freight.. .. .		50 37
	10116	Pay Roll, Street Work,		
		Disbursed by M. L. Whitley, Clerk.. .. .		646 74
29	10117	Pay Roll, Pumping Station,		
		Disbursed by Geo. C. Gensheimer, Ass't Sec'y..		755 00
	10118	Pay Roll, Office and Inspectors,		
		Disbursed by Geo. C. Gensheimer, Ass't Sec'y..		866 66
Total.. .. .				\$ 6,382 07

DECEMBER.

TO PAY VOUCHER.

Date.	No.	Of	For	Amount.
2	10119	The Lake Shore & Michigan Southern Ry. Co.,	Freight.. .. .	\$ 88 27
	10120	Pay Roll, Street Work,	Disbursed by M. L. Whitley, Clerk.. .. .	638 95
9	10121	W. F. Nick & Son,	Brush and Oil.. .. .	1 35
	10122	Consumers Ice & Cold Storage Co.,	Ice.. .. .	1 40
	10123	J. Jacobs,	Suit of Oil Skins.. .. .	2 25
	10124	C. A. Taylor,	Horse Shoeing.. .. .	3 20
	10125	Harry Thompson,	Caps, Dynamite and Fuse.. .. .	3 22
	10126	C. Kessler,	Brooms.. .. .	3 50
	10127	Lyman Felhelm,	Wooden Plugs.. .. .	3 75
	10128	Erie Heating & Plumbing Company,	Plumbing.. .. .	4 15
	10129	A. S. Pinney.	Hardware and Tools.. .. .	4 36
	10130	Held, Gorenflo & Co.,	Advertising.. .. .	6 00
	10131	The Erie Gas Company,	Coke.. .. .	6 73
	10132	The Dispatch Publishing Company,	Advertising.. .. .	9 60
	10133	Keystone Electric Company,	Repairs to Electric Light Plant.. .. .	10 00
	10134	Mehl & Sapper,	Hardware and Tools.. .. .	14 19
	10135	Wm. Schade,	Blacksmithing.. .. .	14 41
	10136	Conrad J. Brown,	Oats.. .. .	15 60
	10137	G. J. Gebhardt,	Coal and Wood.. .. .	16 00
	10138	Keystone Carriage Works,	Top to Wagon.. .. .	18 00
	10139	O. C. Thayer & Son,	Cement and Clay.. .. .	19 77
	10140	E. J. Riblet,	Shop Rent and Repairing Chair.. .. .	21 75
	10141	The Board of Fire Commissioners,	Electric Gong.. .. .	25 00
	10142	Erie Oil Works,	Oil.. .. .	26 75
	10143	Mayer Bros.,	Repairing Pavements.. .. .	28 01
	10144	W. H. Maloney & Co.,	Trees.. .. .	30 00
	10145	Mutual Telephone Company,	Rental of Telephones.. .. .	36 00

DECEMBER, Continued.

TO PAY VOUCHER.

Date.	No.	Of	For	Amount.
9	10146	J. M. Dunn,		
		Brick.. .. .	\$	47 50
	10147	The Shelby Electric Co.,		
		Electric Lamps.. .. .		54 00
	10148	Erie Machine Shops,		
		Repairing Engines.. .. .		71 70
	10149	Jas. McCrea & Co.,		
		Steam Joint Clamps.. .. .		81 76
	10150	The Atlantic Refining Company, Eclipse Station,		
		Oil.. .. .		118 62
	10151	Globe Iron Foundry Co.,		
		Castings.... .. .		119 03
	10152	Hays Manufacturing Co.,		
		Fittings.. .. .		136 04
	10153	Erie Mfg. & Supply Co.,		
		Packing, Tools, etc.,... .. .		180 19
	10154	Henry Shenk,		
		Repairs to Electric Light House.. .. .		405 01
	10155	Momeyer & Graf,		
		Coal.. .. .		456 63
	10156	R. D. Wood & Co.,		
		Fire Hydrants and Gate Valves.. .. .		708 00
	10157	United States Cast Iron Pipe & Foundry Co.,		
		Pipe and Specials.... .. .		1,076 81
	10158	Jarecki Manufacturing Co.,		
		Brass Disc... .. .		1 05
	10159	Geo. C. Gensheimer, Ass't Sec'y,		
		Sundries.. .. .		9 09
	10160	The Flickinger Roofing & Cornice Co., Ltd.,		
		Sheet Copper and Labor.. .. .		10 50
	10161	James L. Firman,		
		Teaming.. .. .		15 88
	10162	The Lake Shore & Michigan Southern Ry. Co.,		
		Freight.. .. .		45 18
	10163	Pay Roll, Street Work,		
		Disbursed by M. L. Whitley, Clerk.. .. .		541 09
16	10164	Pay Roll Street Work,		
		Disbursed by M. L. Whitley, Clerk.. .. .		504 65
	10165	Pay Roll, Pumping Station,		
		Disbursed by Geo. C. Gensheimer, Ass't Sec'y..		755 00
	10166	Pay Roll, Office and Inspectors,		
		Disbursed by Geo. C. Gensheimer, Ass't Sec'y..		866 74
23	10167	F. Disterdick,		
		Repairs to Boiler House.. .. .		72 64
	10168	Isadore Sobel, Postmaster,		
		Postage Stamps.. .. .		100 00
	10169	William Hardwick,		
		Services as Commissioner, 2 months... .. .		150 00
	10170	T. W. Shacklett,		
		Services as Commissioner, 2 months... .. .		150 00
	10171	Clark Olds,		
		Services as Commissioner, 2 months,		150 00
	10172	Pay Roll, Street Work,		
		Disbursed by M. L. Whitley, Clerk.. .. .		336 36

DECEMBER, Continued.

TO PAY VOUCHER.

Date.	No.	Of	For	Amount.
22	10173	S. A. Davenport,		
		Retainer from March 1st, 1898, to Jan. 1st, 1900..	\$	183 33
	10174	United States Cast Iron Pipe & Foundry Co.,		
		Pipe and Specials..		10,822 25
30	10175	Volney B. St. John,		
		Decorating..		5 00
	10176	T. S. Buck,		
		Numbering Stamp..		14 00
	10177	E. J. Riblet,		
		Shop Rent..		20 00
	10178	Geo. C. Gensheimer, Ass't Sec'y,		
		Sundries..		56 63
	10179	Baas & Althof,		
		Engine Room Furniture and Fixtures..		57 70
	10180	Ashby & Vincent,		
		Books and Stationery..		91 00
	10181	Pay Roll, Street Work,		
		Disbursed by M. L. Whitley, Clerk..		263 95
Total..				\$19,729 54

RECAPITULATION, 1899,

Number Vouchers Issued.	MONTH.	AMOUNTS.
14	January....	\$ 18,158 92
57	February..	10,017 50
20	March..	1,996 90
79	April.	12,237 78
75	May..	6,174 12
59	June	7,287 47
57	July..	7,384 54
60	August..	22,078 75
64	September..	12,075 42
63	October..	15,690 54
54	November..	638 07
63	December..	19,729 54
665	Total..	\$139,213 55

DISBURSEMENTS.

DEPARTMENT	FOR THE YEAR 1899.				From	
	ACCOUNT.				Beginning of Works to December 31, 1899.	
		Labor.	Material.	Total.		
Construction.	Advertising, Books, S. & P.....	a \$	10	\$	4 38	\$ 649 13
	Boiler No. 1	g	01	37	38	2,325 22
	Boiler No. 2	g	01	38	39	2,325 36
	Boiler No. 3	g	01	38	39	2,325 27
	Boiler No. 4	g	01	38	39	2,325 39
	Boiler No. 5	g	01	38	39	2,302 82
	Boiler No. 6	g	01	38	39	2,302 93
	Boiler No. 7	g	01	38	39	2,303 25
	Boiler No. 8	g	01	38	39	2,314 21
	Boiler House	g				15,826 24
	Buildings and Grounds.....		2,467 05	2,461 97	4,929 02	95,111 06
	Civil Engineering.....		2,066 31	1,953 84	4,020 15	8 554 80
	Connections	d				123,199 69
	Drinking Fountains.....	a	145 69	550 37	696 06	1,577 08
	Electric Light Plant	b				5,613 64
	Engines and Boilers, to Dec. 31, 1891	h				96 715 79
	Engine No. 4		2 04	86 21	88 25	48,441 43
	Engine No. 5		536 06	15,465 79	16,001 85	17,639 00
	Engine House No. 3.....					21,413 19
	Engine Room, Furniture and Fixtures		3 22	136 14	139 36	1,664 91
	Expense	a	70	1 34	2 04	398 67
	Fire Hydrants		90 42	858 54	948 96	28,559 51
	Fuel	a	60	25 16	25 76	264 02
	Gas Well					8,148 59
	High Service System.....	h	3,604 43	29,479 13	33, 083 56	48,298 45

WATER WORKS, IN THE CITY OF ERIE.

Construction.	H. S. S Stand Pipe No. 2, Iron Work	i	41 86	5 16	47 02
	H. S. S. Stand Pipe No. 2, Stone Work	i	35 06	5 16	40 22
	Horse, Wagon and Cartage		60 22	201 42	5,205 42
	Intake Pipe No. 1.....				49,474 39
	Intake Pipe No. 2	b			140,971 03
	Interest and Discount				99,420 95
	Light, Oil, Lamps, Wicks, &c.	a	55	23 17	264 36
	Lowering Mains		412 58		2,165 91
	Mains and Branches		6,964 40	22,672 51	585,058 11
	Main, 30 inch				75,956 60
	Meters		173 29	769 72	20,863 72
	Office, Furniture and Fixtures	a	44	18 72	1,633 42
	Oil and Tallow	b	21	9 06	31 46
	Park Fountains				3,244 68
	Railroad Switch and Scales				2,918 92
	Reservoir				123,150 83
	Shop Rent	a	2 86	120 77	1,037 09
	Steel Plate Chimney No. 1	g			4,177 53
	Stop Valves		139 68	1,316 83	37,762 49
	Superintendent's Stores				217 05
	Telephone and Telegraph	a	10	4 44	22 86
	Tools and Repairs		366 59	50 62	5,895 22
	Waste and Packing	g			5 20
Maintenance.	Water Lots	e			15,851 29
	Advertising, Books, S. & P.	a	48	20 18	514 38
	Boilers to March 5, 1898				24,501 08
	Boiler No. 1	h	40 71	78 21	216 00
	Boiler No. 2	h	46 74	79 30	235 02
	Boiler No. 3	h	43 03	80 49	219 75
	Boiler No. 4	h	49 12	84 85	220 22
	Boiler No. 5.....	h	39 74	81 46	204 69
	Boiler No. 6	h	45 23	81 88	223 18
	Boiler No. 7	h	34 83	78 71	185 81

a Accounts opened in 1891. c Accounts opened in 1893. e Accounts opened in 1895. h Accounts opened in 1898.

b Accounts opened in 1892. d Accounts opened in 1894. g Accounts opened in 1897. i Accounts opened in 1899.

WATER WORKS, IN THE CITY OF ERIE.

Maintenance.	Mains and Branches	1,655 76	354 01	2,009 77	22,331 48
	Main, 30-inch	a.....			910 49
	Meters	111 48	188 59	300 07	5,941 36
	Office Furniture and Fixtures	a.....	67 96	70 07	604 61
	Oil and Tallow	b.....	01	35	21 28
	Railroad Switch and Scales	a.....	117 64	188 73	1,181 74
	Reservoir		330 74	430 20	35,649 87
	Shop Rent	a.....	2 86	123 63	1,036 85
	Stand Pipe	c.....	20 31	76 87	4,237 97
	Steel Plate Chimney No. 1	h.....			1 35
	Stop Valves	258 49	148 31	406 80	6,004 25
	Superintendent's Stores				396 52
	Tools and Repairs	383 27	608 04	991 31	8,001 25
	Waste and Packing	b.....	21	8 93	51 31
Operating.	Advertising, Books, S. & P.	a.....	129 11	132 16	1,629 46
	Buildings and Grounds	b.....	1,361 46	1,361 46	9,739 60
	Drinking Fountains	g.....	122 84	122 84	297 91
	Electric Light	h.....	2 52	106 41	161 55
	Electric Light Plant	b.....			34 84
	Engineers and Firemen	7,581 00		7,581 00	144,967 19
	Engineer's Stores				2,348 57
	Expense	a.....	85	35 76	1,126 22
	Fire Hydrants	b.....	411 59	411 59	1,427 24
	Flushing Sewers	g.....	6 50	6 50	37 17
	Fuel	123 04	5,201 79	5,324 83	173,769 80
	Horse, Wagon and Cartage	d.....			54 81
	Inspectors	c.....	2,468 57	2,468 57	16,825 59
	Insurance		60	25 16	1,579 77
	Light, Oil, Lamps, Wicks, &c.	a.....	1 53	66 09	508 97
	Meters	b.....	345 57	345 57	3,894 78
	Oil and Tallow		38 47	1,626 17	16,612 01
	Rent of Office	b.....			603 09
	Reservoir	b.....	491 35	491 35	3,784 42

a Accounts opened in 1891. c Accounts opened in 1893. e Accounts opened in 1895. h Accounts opened in 1898.

b Accounts opened in 1892. d Accounts opened in 1894. g Accounts opened in 1897. i Accounts opened in 1899.

DISBURSEMENTS.---Continued.

DEPARTMENT.	ACCOUNT.	FOR THE YEAR 1899.			From Beginning of Works to December 31, 1899.
		Labor.	Material.	Total.	
Operating.	Stop Valves	32 99	.....	32 99	432 62
	Taxes, United States, State, County and School.....	6 63	280 27	286 90	2,701 48
	Telephone and Telegraph..... a	4 00	169 07	173 07	1,649 25
	Tools and Repairs..... a	2 07	87 64	89 71	946 02
	Turning On and Off Water	280 68	.....	280 68	920 10
	Waste and Packing	17 35	733 83	751 18	8,046 68
	Water Rents Returned	25	10 65	10 90	1,104 08
	Advertising, Books, S. & P.	12 86	543 50	556 36	10,913 25
	Expense	88	37 24	38 12	14,872 82
	Postage	8 27	349 70	357 97	7,039 76
Sundries.	Salaries	7,409 35	.....	7,409 35	198,297 65
	City of Erie, Board of Com. of the Sinking Fund..	.....	.....	.....	145,500 00
Legal.	City of Erie .....	.....	.....	.....	19 23
	Court Costs .....	.....	.....	.....	478 40
	Counsel Fees	183 33	.....	183 33	4,276 86
	Expense .....	.....	.....	.....	189 02

Totals \$45,461 66 \$93,751 89 \$139,213 55 \$2,675,822 03

a Accounts opened in 1891. c Accounts opened in 1893. e Accounts opened in 1895. h Accounts opened in 1898.
b Accounts opened in 1892. d Accounts opened in 1894. g Accounts opened in 1897. i Accounts opened in 1899.

RECAPITULATION.

DEPARTMENT.	FOR THE YEAR 1899.			From Beginning of Works to Dec. 31, 1899.
	Pro-Rata.	Labor.	Material.	Total.
Construction .....	.6704657+	\$17,114 54	\$76,223 38	\$93,337 92
Maintenance .....	.1117504+	7,429 52	8,127 65	15,557 17
Operating .....	.1564023+	13,302 91	8,470 42	21,773 33
Accounting .....	.0600645-	7,431 36	930 44	8,361 80
Sundries .....	.....	.....	.....	.....
Legal .....	.0013168+	183 33	.....	183 33
Totals .....	.9999997+	\$45,461 66	\$93,751 89	\$139,213 55
				\$2,675,822 03

Amount of Coal Consumed in Pumping, Gallons of Water Pumped, Average Height Pumped, Cost per Million Gallons, Etc., from First Year Works were operated to December 31, 1899.

REPORT OF THE COMMISSIONERS OF

YEAR.	Tons Coal Consumed.	Cost Coal from Jan. 1 to Dec. 31.	Grades of Coal.	Gallons of Water Pumped.	Increase or Decrease.	Number of places supplied.	No of Fire Hydrants.	Average height of Water in Reservoir above surface of Bay.	Cost Coal per million gallons raised to Reservoir.	Gallons raised by one pound of Coal.
1868...	591 1	8 309 61	Lump.							
1869.	544 4	4,818 48	"							
1870...	1,064 5	5,159 10	"	246,648,960		1,218	97	232 0	\$18 76	98 5
1871.	1,422 7	7,117 00	"	279,368,495	32,719,535 i	1,727	99	232 0	16 52	150 9
1872...	1,308 5	6,528 50	"	395,076,000	115,707,505 i	2,140	103	232 0	21 90	114 8
1873 ..	1,672 5	8,412 65	"	384,062,415	11,013,585 d	2,475	107	232 0	17 38	126 4
1874...	1,759 0	7,709 54	"	444,817,395	60,754,980 i	2,663	107	232 0	16 30	145 5
1875...	1 836 4	8,657 61	"	531,005,475	86,188,080 i	2,700	110	232 0	13 30	159 3
1876 ..	1,105 1	8,925 22	"	670,726,650	139,721,175 i	2,763	112	232 0	12 75	135 7
1877...	2,456 6	8,509 33	"	660,981,810	9,744,840 d	2,854	114	232 0	11 64	136 4
1878 ..	2,463 3	7,945 37	"	682,392,315	21,410,505 i	2,915	115	232 0	9 19	153 6
1879...	2,628 1	7,428 92	"	807,800,400	125,408,085 i	3,011	121	232 0	8 99	126 0
1880...	3,076 1	6,978 41	Slack.	775,805,250	31,995,150 d	3,568	126	232 0	6 68	142 2
1881...	3,430 3	6,517 58	"	975,640,934	219,835,684 i	4,110	161	232 0	6 45	139 7
1882...	2,968 2	5,355 93	"	829,759,260	145,881,674 d	4,687	171	234 0	4 66	170 0
1883...	2 398 2	3,908 59	"	815,939,685	13 8 9,575 d	5,077	197	234 7	4 99	152 4
1884...	3,010 8	4,502 61	"	917,781,350	101,841,665 i	5,395	248	232 9	4 40	159 7
1885...	3,243 8	4,575 79	"	1,036,496,665	118,715,315 i	5,658	270	233 3	3 86	165 8
1886 ..	3,369 0	4,318 64	"	1,117,389,075	80,892,410 i	6,140	280	234 1	2 95	216 0
1887...	2,820 4	3,589 31	"	1,218,213,688	100,824,613 i	6,368	318	234 6	1 89	192 1
1888...	2,392 3	2,545 46	"	1,341,708,002	123,494,314 i	6,600	333	235 2	1 80	301 5
1889...	2,446 0	2,661 12	"	1,475,358,220	133,650,218 i	7,086	346	236 9	1 81	322 4
1890...	2,583 6	3,052 89	"	1,659,625,551	184,267,331	7,728	372	237 3	2 18	291 42
1891...	3,120 7	3,941 53	"	1,807,038,580	147,413,029 i	8,255	393	237 4	2 35	279 43
1892...	3,658 0	4,807 11	"	2,047,993,505	240,954,925 i	8,998	415	236 5	2 66	248 6
1893...	4,693 5	6,218 95	"	2,333,638,610	285,645,105 i	9,687	444	236 6	2 43	306 8
1894 ..	2,960 0	4,423 59	"	1,816,596,518	517,042,092 d	10,680	479	237 2	2 21	278 62
1895...	3,541 5	4,377 16	"	1,975,396,305	158,797,787 i	.....	489	237 6	1 796	328 17
1896...	3 056 0	3,603 28	"	2,005,757,728	30,361,423 i	10,846	514	235 9	2 034	331 75
1897.	3,338 2	4,507 52	Miscel'.	2,215,416,770	209,659,042 i	11,385	523	235 6	1 68	363 98
1898...	3,119 0	3,815 68	Slack.	2,270,520,528	55,103,758 i	11,739	543	235 48	* 1 701	356 408
1899...	3,819 1	4,633 06	"	2,722,322,604	451,802,076 i	11,932	565			

* HIGH SERVICE SYSTEM comprises all the territory south of Nineteenth street. In this district we endeavor to pump against a head of 35 feet. In the absence of a self-registering gauge we are unable to tell the exact average pressure. See pumping statistics.



NEW BOILER HOUSE, AND SELF-SUSTAINING STEEL PLATE
CHIMNEY.

BALANCE SHEET---INDIVIDUAL LEDGERS.

1899.

ASSESSED ACCOUNTS.

Ward.	Balance from Dec. 31, 1898.	Assessments	Additions.	Penalties.	Balance to Jan. 1, 1900.	Totals.	Balance from Dec. 31, 1898	Deductions.	Cash.	Balance to Jan. 1, 1900.
First....	\$ 74 01	\$14,767 87	\$ 675 31	\$ 70 76	\$ 44 51	\$15,632 46	\$36 80	\$1,501 55	\$14,013 18	\$ 80 93
Second..	57 64	22,537 83	1,072 99	77 90	76 18	23,822 54	65 10	1,034 27	22,665 00	58 17
Third....	51 72	24,827 23	1,337 36	83 27	61 47	26,361 05	77 74	1,359 56	24,866 28	57 47
Fourth..	162 50	20,665 98	945 34	78 26	59 84	21,911 92	50 33	1,910 39	19,889 59	61 61
Fifth	50 46	9,906 27	533 46	44 20	36 96	10,571 35	26 00	494 67	10,000 64	50 04
Sixth...	49 32	11,744 37	666 93	53 97	31 71	12,546 30	19 58	604 98	11,874 55	47 19
Seventh.	7 49	749 52	121 42	6 26	78	885 47	1 04	40 77	800 04	43 62
Total..	\$453 14	\$105,199 07	\$5,352 81	\$414 62	\$311 45	\$111,731 09	\$276 59	\$6,946 19	\$104,109 28	\$399 03

METER ACCOUNTS.

First....	\$ 845 94	\$ 2,762 96	\$ 2 84	\$ 94	\$ 17 92	\$ 3 630 60		\$ 262 35	\$ 3,108 83	\$ 259 42
Second..	3,870 53	13,892 74	2,433 14	37 52	....	20,233 93	\$2 82	1,150 82	17,503 25	1,577 04
Third..	1,300 75	5,339 45	25 62	11 47	3 40	6,680 69		355 78	5,498 61	826 30
Fourth..	291 27	1,095 90	18 10	2 51	24 49	1,432 27		68 11	1,203 38	160 78
Fifth..	1,169 14	4,988 73	133 02	4 34	103 64	6,398 87		753 84	5,328 02	317 01
Sixth	202 49	1,123 49	18 75	34	101 55	1,446 62		141 04	1,168 02	137 56
Seventh.	109 21	626 12	11 24	84	11 29	758 70		57 10	630 98	70 62
Total..	\$7,789 33	\$29,829 39	2,642 71	\$ 57 96	\$262 29	\$40,581 68	\$2 82	\$2,789 04	\$34,441 09	\$3,348 73

SPECIAL PERMITS.

First.....	\$19 16					\$19 16			\$19 16	
Second..	31 00					31 00			31 00	
Third.....	19 75					19 75			19 75	
Fourth.....	17 93					17 93			17 93	
Fifth.....	35 59					35 59			35 59	
Sixth.....	1 67					1 67			1 67	
Seventh.....	21 63					21 63			21 63	
Total.....	\$146 73					\$146 73			\$146 73	

BUILDING PERMITS.

First.....	\$ 164 18	.....	\$ 164 18	.....	\$ 164 18	.....
Second.....	160 14	.....	160 14	.....	160 14	.....
Third.....	104 82	.....	104 82	.....	104 82	.....
Fourth.....	54 13	.....	54 13	.....	54 13	.....
Fifth.....	94 93	.....	94 93	.....	94 93	.....
Sixth.....	36 48	.....	36 48	.....	36 48	.....
Seventh.....	32 24	.....	32 24	.....	32 24	.....
Total.....	646 92	.....	\$646 92	.....	\$646 92	.....
Water...\$ 8,242 47	\$135,822 11	\$ 7,995 52	\$472 58	\$573 74	\$153,106 42	\$279 41
						\$9,735 23
						\$139,344 02
						\$3,747 76

PLUMBING ACCOUNTS.

First.....	\$ 95 05	.....	\$ 95 05	.....	\$ 77 05	\$ 18 00
Second..	233 71	.....	264 52	.....	87 52	177 00
Third...	294 45	.....	309 79	.....	230 89	77 15
Fourth..	75 96	.....	75 96	.....	30 65	19 31
Fifth...	3 71	.....	3 71	.....	1 00	2 71
Sixth...	4 21	.....	4 21	.....	4 21	.....
Seventh..	64 89	.....	64 89	.....	64 89	.....
Total..	\$46 15	.....	\$818 13	.....	\$496 21	\$294 17
G'd Tot'l	\$8,288 62	\$136,594 09	\$573 74	\$153,924 55	\$279 41	\$9,762 98
		\$7,995 52	\$472 58			\$139,840 23
						\$4,041 93

1899. Statement of Account with the City of Erie, Penna. 1899.

CITY OF ERIE, PENNA.—Dr.			
INTEREST—On balances in in Second National Bank, from October 1, 1898, to April 1, 1899.....			
Interest on same to December 31, 1899.....	128 50	132 37	
From April 1, 1899 to October 1, 1899.....	3 87		
Interest on same to December 31, 1899.....	111 57		245 06
	1 12	112 69	
WATER—City Hall			
Engine Houses		294 80	
Fire Hydrants		200 25	
Flushing Sewers	215 00	31 075 00	
Settling filling in Sewer Trench ..	15 00	230 00	
Fountains—Drinking	157 50		
Fountains—Park	1.251 05	1.408 55	
Parks—Central—East	50 00		
Parks—Central—West	50 00		
Parks—Lakeside—East	17 90		
Parks—Lakeside—West	72 00	189 90	
Sprinkling State St., bet. Front & Dock..			
Sprinkling Streets by Superintendent of Streets	140 80		
	4 98	145 78	
Balance		33 544 28	
			33,789 34
			616,607 51
			650 396 85
CREDITS.			
BALANCE—December 31, 1898			
INTEREST—On same to December 31, 1899.....			624,227 74
RENT—Of Offices one year			24,969 11
			1 200 00
			650,396 85
Balance due the City of Erie, Penna., December 31, 1899.....			
			\$616,607 51.

RESOURCES:

PLANT NORTH OF FRONT STREET—

Buildings and Grounds including Piers to Intake No. 1	114,357 74
Boiler House from January 1, 1896.....	16,078 14
Engine House No. 3, from January 1, 1892.....	21 591 35
Boilers from January 1, 1896.....	18,800 00
Engines and Boilers to December 31, 1891.....	107,309 35
Engine No. 4, from January 1, 1892.....	49 147 09
Engine No. 5 from January 1, 1898.....	17,820 28
Electric Light Plant.	193,076 72
Engine Room Furniture and Fixtures	5,711 28
Intake Pipes—No. 1.....	1,819 03
--No. 2, from January 1, 1892	199,394 79
Railroad Switch and Scales.....	3,262 09
Steel Plate Chimney, No. 1, from January 1, 1896.....	4,245 44
Water Lots from January 1, 1895.....	16 012 59

575,549 17

PLANT SOUTH OF FRONT STREET—

Connections	132,063 72
Drinking Fountains from January 1, 1894	1,597 41
Fire Hydrants	30 197 28
High Service System from January 1, 1898.....	48,996 31
Mains and Branchs	633,434 20
Main 30 inch	83,289 35
Meters	716 723 55
Stop Valves	21,806 31
Office Furniture and Fixtures	40,536 04
Reservoir	991,920 62

1,660 20

137,629 35

1,131,210 17

1,706,759 34

PERSONAL ACCOUNTS—Assessed

399 03

3 747 76

3,348 73

—Meters

294 17

—Plumbing

4,041,93

CASH in hands of Treasurer City of Erie.....

664 22

4,706 15

1,711,465 49

LIABILITIES:

ACCOUNTS City of Erie Penn'a	616,607 51
--Credits on Assessed.....	311 45
--Credits on Meters	262 29
Balance	573 74

617 181 25

1,094,284 24

1,711,465 49

WATER WORKS, IN THE CITY OF ERIE.

55

[illegible]

INTERIOR VIEW.—NEW BOILER HOUSE.

RATES FOR CITY WATER.

Approved by Select Council August 19, 1895. Approved by Common Council September 16, 1895. Approved by the Mayor September 21, 1895.

And as Amended and Approved November 25, 1899.

ARE ALL ANNUAL EXCEPT AS OTHERWISE INDICATED. AND PAYABLE QUARTERLY IN ADVANCE, AS FOLLOWS:

First Quarter—January, February, March—January 1st.
Second Quarter—April, May, June—April 1st.
Third Quarter—July, August, September—July 1st.
Fourth Quarter—October, November, December—October 1st.

If the rents for any quarter are not paid within the first Month thereof five per cent. may be added. If payment is not made by the 15th day of February, May, August and November of each quarter, the water may be turned off from the premises, and shall not be turned on again, without the consent of the Commissioners of Water Works, until all back rents and penalties are paid, and the further sum of one (1) dollar.

Air Pump.. . . .	\$	3 00
Bath Tub—Private (one family) first tub.. . . .		3 00
Bath Tub—Private (one family) each additional tub.. . . .		1 50
Bath Tub—Public, each tub.. . . .		5 00
Bakery, per barrel of flour used (but no charge less than \$5)		01
Barber Shop, first chair, including hand basin.. . . .		4 00
Barber Shop, each additional chair, including hand basin..		2 00
Billiard Tables, each.. . . .		1 00
<i>Billiard Tables, when floor is carpeted, one half the above rate:</i>		
Blacksmith Fire, first fire.. . . .		5 00
Blacksmith Fire, each additional fire.. . . .		2 50
Boarding House, (in addition to family rates) per room.. .		1 00
Building Purposes, per bushel of lime; to be paid before work is begun.. . . .		02
Butcher Stalls.. . . .	3 00 to 15 00	
Charitable Institutions, one-third annual rates.		
Cow.. . . .		75
Condensing Boiler for Steam Heating, (per season of 6 months) per horse power		25
Eating Houses.. . . .	5 00 to 25 00	
Family.. . . .		4 00
Fire Protection Fixtures, testing same, thirty (30) minutes or less.. . . .		3 00
Fire Protection Fixtures, testing same, one (1) hour or less, but more than thirty (30) minutes.. . . .		5 00
Flushing Sewers, settling earth in ditches or purposes of like nature, per hour, or fractional part of an hour, each.. . . .		5 00
Gas Engines, five horse power, or less.. . . .		5 00
Gas Engines, for each additional horse power		1 00
<i>Gas Engines, when water is used over and over again, from tank prepared for the purpose, one half the above rates</i>		
Hand Basins in dwellings, hotels and schools, first basin..		1 00

Hand Basins in dwellings, hotels and schools, each additional basin.. . . .	\$	50
Hand Basins in offices, stores and blocks, each.. . . .		1 00
Hotels, (In addition to family rates) per room.. . . .		1 00
Laundry, shop.. . . .		5 00
Laundry, wash tub, stationary, each.. . . .		2 00
Laundry, revolving washer, each.. . . .		5 00
Livery Stable, per horse.. . . .		2 00
Offices.. . . .	3 00 to 10 00	
Private Stable, one or two horses.. . . .		2 00
Private Stable, each additional horse over two.. . . .		1 00
Printing Offices.. . . .	5 00 to 30 00	
Public Halls.. . . .	5 00 to 25 00	
Saloons.. . . .	5 00 to 25 00	
School, per pupil (in addition to fixtures).. . . .		10
Slaughter Houses.. . . .	5 00 to 50 00	
Sleeping Rooms, each.. . . .		1 00
Sprinkling Streets or Lawns with Hose, Per Season:		
Corner lot, 41 feet front or less.. . . .		5 00
Inside lot, 41 feet front or less.. . . .		3 00
For each additional foot front to either corner, or inside lot.. . . .		05
Steam Engines, ten hours per day, each Horse Power .. .		2 50
Stores.. . . .	3 00 to 15 00	
Urinal, private, self-closing, (one family).. . . .		2 00
Urinal, private, not self-closing (one family).. . . .		6 00
Urinal, public, self-closing.. . . .		3 00
Urinal, public, not self-closing.. . . .		10 00
Urinal, private or public, continuous flow.....	10 00 to 30 00	
Wash Tub, stationary, first tub (one family).. . . .		2 00
Wash Tub, stationary, each additional tub, (one family)..		1 00
Water Closet, pan or tank (one family) private		3 00
Water Closet, pan or tank (one family) each additional water Closet....		1 50
Water Closet, pan or tank, public, each.. . . .		5 00
Water Closet, hopper, (one family) private, for each water Closet		6 00
Water Closet, hopper, public, for each water closet.. . .		10 00
Work Shop, ordinary use.. . . .	3 00 to 5 00	

Sprinkling for any purpose will ONLY be allowed on premises where water is taken and paid for, for domestic or other inside use. The sprinkling season is from May 1st to November 1st, in each year.

There is no fractional part of a sprinkling season.

It will cost as much to sprinkle but once at any time during the sprinkling season as it will to sprinkle each day, at the prescribed hours, during the entire season.

Sprinkling must be confined to the hours between 5 and 8 A. M., 12 and 1 P. M. and 5 and 8 P. M., nor during said intervals more than one hour at a time. Persons who exceed one hour may be charged at fountain rates or held liable for violation of the rules, at the option of the Commissioners.

The inside diameter of hose used for sprinkling purposes must not be more than three-quarters of an inch, and the inside diameter of the orifice to the nozzle of the same must not be more than one-quarter of an inch. The use of leaky or defective hose is prohibited.

No person will be allowed to sprinkle adjoining or opposite premises, nor to use the water from any hose attachment, or through any hose

for any purpose not authorized by the Commissioners. All sprinkling devices not held in the hand when used shall be classed as fountains, or fountain jets, and assessed accordingly.

Fountains, fountain jets, etc., will be assessed according to the inside diameter of its principal part or parts, and for a continuous flow during the entire sprinkling season.

Hose must not be used for cleaning streets or street gutters, for washing away collections of leaves, heaps of dirt or offal, or flooding streets.

Sprinkling fixtures, to which hose can be attached, no matter where located on any premises, makes said premises assessable for sprinkling.

All plumbing from the curb line inward must be done by a licensed plumber.

Water fixtures will be assessed for each and every purpose available, and for each family or establishment within the enclosure or separated only by a door, gateway or other means of easy communication.

No abatement of charges shall be allowed for vacancy of premises, except from the date that notice has been given at the office of the Commissioners of Water Works that they are unoccupied.

The Commissioners may limit or stop the supply of water in cases of emergency, and shut it off for repairs or extensions, they being the judges of the time and necessity. Neither the Commissioners nor the city of Erie shall be liable in damages for any insufficient supply of City water.

For each and every violation of the rules and regulations of the Water Works, the offending party will be subject to a fine of not less than Five nor more than Fifty Dollars.

METER RATES.

Twenty (20) cents for each one thousand (1,000) gallons for the first Twenty-five Thousand (25,000) gallons, and Four (4) cents for each one Thousand (1,000) gallons consumed thereafter during each current quarter.

PROVIDED the minimum receipts from each meter shall be as follows:

$\frac{3}{4}$ inch or less.....	\$3.75	1 inch.....	\$ 4.50
1 $\frac{1}{2}$ inch	6.25	2 inch.....	10.00
2 inch	18.75	4 inch.....	38.75
6 inch.....	\$100.00		

TERMS: All water sold by Meter Measurement must be paid for on or before THE 10TH DAY OF THE FIRST MONTH OF EACH QUARTER. All Meter Accounts remaining unpaid at the close of business on the 10th day of said month shall have Five Per Centum Added thereto. On the 15th day of said month, WATER MAY BE TURNED OFF from the property whose meter account is unpaid, and will not be again turned on until all arrearages and penalties are paid, and the further sum of One (\$1.00) Dollar.

ELECTRIC LIGHT ROOM.

1899. STATEMENT OF WORK DONE BY INSPECTOR NO. 1. 1899.

MONTH.	TURNED OFF ACCOUNT.			TURNED ON ACCOUNT.			NEW HOUSES.			FIXTURES.				Totals.
	Unpaid.	Vacancies	Leaks and Waste.	Paid.	Occupied.	Building Purposes.	Com-pleted.	Com-plaints.	Frozen.	Installed.	Removed.	Leaks and Waste.	Vacancies	
January .....	..	2	3	..	30	6	15	5	26	50	36	10	..	183
February .....	..	2	7	3	12	7	16	6	127	70	32	7	532	821
March	1	2	4	..	35	10	26	3	26	145	26	14	..	292
April .....	..	7	3	..	50	11	70	7	1	190	50	10	53	452
May	4	25	2	..	48	12	75	2	..	234	36	3	491	932
June	1	38	4	1	47	11	56	6	..	220	18	10	129	543
July .....	..	50	2	..	49	10	31	5	..	160	15	6	..	328
August	7	15	2	2	26	7	15	7	..	71	12	9	..	173
September	1	21	3	1	32	5	30	6	..	145	4	130	..	385
October .....	..	30	2	..	33	7	31	2	..	95	16	5	65	286
November	2	51	3	1	45	4	35	8	..	106	20	10	46	331
December	1	13	1	1	25	7	33	3	..	150	36	9	294	573
Total	17	256	36	9	432	97	433	60	180	1,636	301	100	1,740	5,297

1899.

STATEMENT OF WORK DONE BY INSPECTOR NO. 2.

1899.

MONTH.	TURNED OFF ACCOUNT.			TURNED ON ACCOUNT.			NEW HOUSES			FIXTURES				Totals.
	Unpaid.	Vacancies	Leaks and Waste.	Paid.	Occupied.	Building Purposes:	Com-pleted	Com-plaints.	Frozen.	Installed.	Removed.	Leaks and Waste.	Vacancies	
January						1	2	1		1				5
February			1							12				13
March										2				2
April		3			2					3				8
May	17	1		12						12				42
June										1			105	106
July														
August	1	5			21	2	11			26	2		48	116
September		3			5	1	4			10	2		127	152
October		1								1				2
November	21	1			1					6				29
December					1					5				6
Total	39	14	1	12	30	4	17	1		79	4		280	481

1899. STATEMENT OF WORK DONE BY INSPECTOR NO. 3. 1899.

MONTH.	TURNED OFF ACCOUNT.			TURNED ON ACCOUNT.			NEW HOUSES.			FIXTURES.					Totals:
	Unpaid.	Vacancies	Leaks and Waste.	Paid.	Occupied.	Building Purposes.	Com-pleted.	Com-plaints.	Frozen.	Installed.	Removed:	Leaks and Waste:	Vacancies		
January		1			1	1		1		13		1		18	
February	3		1						1					5	
March															
April		1		1	1					4				7	
May	15			11						20			58	104	
June										2				2	
July										6				6	
August															
September										1				1	
October										5				5	
November	2	1			1		1			22				27	
December															
Total	20	3	1	12	3	1	1	1	1	73		1	58	175	

1899. Statement of Work Done at Annual Inspection by Inspector No. 3. 1899.

WARD.	ENGINES			FIXTURES.				SPRINKLERS.				TUBS.		WATER CLOSETS			TOTAL		
	Air Pumps.	Gas	Steam	Draw Cocks	Goose Necks	Hydrants	Hand Basins	Heating Boilers	Premises	Curb	Hydrant	Lawn	Sill Cock	Bath	Wash	Urinals.		Non-Closi'g or Hopper	Pan or Tank.
First.....	7	1	7	1,601	10	108	373	16	1401	80	30	79	399	335	100	33	10	747	5,337
Second	22	10	13	2,732	13	297	448	23	2193	52	48	80	497	353	53	65	31	1 117	8,047
Fifth.....	6	3		1,387	4	104	92	20	1207	20	29	85	380	137	12	15	1	335	3,837
Seventh.....			1	36		2	2	....	33	1	1	2	6	2	..	....	...	6	92
Total	35	14	21	5,756	27	511	915	59	4834	153	108	246	1 282	827	165	113	42	2,205	17,313

1899. Statement of Work Done at Annual Inspection by Inspector No. 2. 1899.

Third.....	20	8	9	2,696	3	217	981	52	1907	106	46	94	742	760	261	92	23	1,826	9,843
Fourth.....	8	3	4	1,620	14	273	784	42	1535	169	81	112	559	614	301	62	48	1,260	7,490
Sixth.....	6	2	3	1,523	11	182	189	7	1264	24	50	46	429	197	55	27		468	4,483
Seventh.....				22		4	2		23	3			4	2				2	62
Total.....	35	13	16	5,861	28	676	1956	101	4729	302	177	252	1,734	1573	617	181	71	3,556	21,878

Pumping Statistics for 1899.

ENGINES.														
MONTHS.	No. 3. GASKILL 5,000,000 GALLONS				No. 4. WORTHINGTON 12,000,000 GAL.				No. 5. WORTHINGTON 8 000,000 GALLONS.					
	SERVICE.		TOTAL		SERVICE.		HIGH.		SERVICE.		TOTAL.			
	Days Run	Gallons.	Days Run	Gallons.	Days Run	Gallons.	Days Run	Gallons.	Days Run	Gallons.	Days Run	Gallons.		
January....					31	222,199,872								
February...					28	235,693,512								
March.....					28	187,948,824								
April.....					5	32 725,320	25	153,749,640	6	29,183,352	25	153,749,640		
May.....					26	161,540,592			4	25,623,840	6	29,183,352		
June.....					24	177,813 552			4	25,623,840	4	25,623,840		
July.....					25	168,842,448	10	30 234,600	5	34,640,760	15	64,875,360		
August.....					31	206 849 856	27	68,802,360			27	68,802,360		
September..					11	64,463,664	9	16,285,532	18	107,187,268	27	123 472,800		
October.....					15	81,318,984	11	15,289,560	16	93,525 960	27	108 815,520		
November..					17	93,465,192	17	20 985,360	12	65,039,040	29	86,024,400		
December..									31	179,372,952	31	179,372,952		
Total.....	66	162,124,690	32	87,415,874	98	249 540 564	241	1,632,861,816	99	305,347,052	92	534,573,172	191	839,920,224

Pumping Statistics for 1899.---Continued.

ENGINES.

MONTHS.	TOTAL.		SERVICE.		TOTAL.		DAILY AVERAGE.	AVERAGE LIFT IN FEET.
	HIGH.		LOW.					
	Days Run.	Gallons.	Days Run.	Gallons.	Days Run.	Gallons.		
January.....			31	222,199,872	31	222,199,872	7,167,737	235.14
February.....			28	235,693,512	28	235,693,512	8,417,625	235.38
March.....			28	187,948,824	28	187,948,824	6,062,865	235.53
April.....	25	153,749,640	5	32,725,320	30	186,474,960	6,215,832	235.30
May.....			32	190,723,944	32	190,723,944	6,152,385	235.64
June.....			28	203,437,392	28	203,437,392	6,781,246	235.69
July.....	10	30,234,600	30	203,483,208	40	233,717,808	7,539,284	235.45
August.....	27	68,802,360	35	214,111,110	62	282,913,470	9,126,240	235.35
September.....	9	16,285,532	57	251,805,552	66	268,091,084	8,936,369	235.12
October.....	31	65,510,640	31	174,844,944	62	240,355,584	7,753,405	235.67
November.....	32	57,075,960	29	158,504,232	61	215,580,192	7,186,006	235.83
December.....	31	75,813,010	31	179,372,952	62	255,185,962	8,231,805	235.66
Total.....	165	467,471,742	365	2,254,850,862	530	2,722,322,604	7,458,418	235.48
Daily Average.....		2,833,162		6,177,673				

PUMPING STATISTICS.

There are four pumping engines.

Nos. 1 and 2 are Cornish Bull Pumps, erected in 1868; alike in their dimensions, which are as follows: Steam Cylinders, 60 inches in diameter; Pump Plunger, 20 $\frac{1}{4}$ inches in diameter, each 10-foot stroke, capacity being 165 gallons per stroke, pumping 2,000,000 gallons daily. These pumps are out of commission, the cost for repairs being greater than they are worth.

No. 3 is a Gaskill Horizontal Compound Pumping Engine, erected in 1886, having two H. P. Cylinders 21 inches in diameter, two L. P. Cylinders 42 inches in diameter, two pumps 19 $\frac{1}{2}$ inches in diameter, all 36-inch stroke; capacity being 182 gallons per revolution, pumping 5,000,000 gallons daily.

No. 4 is a Worthington Horizontal Compound High Duty Pumping Engine, erected in 1893, having two H. P. Cylinders 33 inches in diameter, two L. P. Cylinders 66 inches in diameter, two pumps 29 inches in diameter, all 49 $\frac{3}{4}$ -inch stroke; capacity being 552 gallons per stroke, pumping 12,000,000 gallons per day, at a piston speed of 128 feet per minute, against a head of 260 feet.

No. 5 is a Worthington Horizontal Compound High Duty Pumping Engine; erected in 1899, having two H. P. Steam Cylinders each 25 inches in diameter; two L. P. Cylinders, each 50 inches in diameter, two double acting water plungers, each 23 inches in diameter, all 36 inches stroke; capacity being 264 gallons per stroke, pumping 8,000,000 gallons per day, at a piston speed of 136 feet per minute, against a total load of 146 pounds per square inch. (a head of 240 feet).

There are two intakes, one constructed in 1868, of which 52 feet is brick 14 ft in diameter, 590 ft is wood 4 $\frac{1}{4}$ ft in diameter and 333 ft is boiler iron 4 ft in diameter, making a total length of 975 feet. The top of the outer end of this intake is four feet below the zero level of the bay, and as it approaches the shore ascends till the top is only two feet above the zero level of the bay. *This intake has not been used since the new one was completed, and as the part made of wood has not been submerged for some time it is undoubtedly past use.* The second intake was completed in 1896. It is made of cast iron 60 inches internal diameter, 8,307.18 feet long, buried in the bottom of the bay; at no place is there less than three feet of earth over its top. The outer end terminates in an octagonal crib, 10 feet being its extreme width and 8 feet high, the top being 13 feet below the zero level of the bay. So far as we know, this is the longest single piece of submerged 60-inch cast iron pipe in the world.

The standpipe was erected in 1868. It is five feet in diameter and 259.65 feet in height. A spiral staircase surrounds it and all enclosed in brick. So far as we know, this the the tallest standpipe in the world.

The boiler house was erected in 1897 and is 74 feet wide, 102 feet long, and 25 feet from floor line to bottom of cords to roof. On the north side eight horizontal tubular boilers are installed in batteries of two each. The boilers are 72 inches in diameter, 18 feet long, without domes, and contain eighty 4-inch lap welded tubes, capable of carrying 150 lbs. pressure to the square inch.

On the south side of the house can be erected an equal number of the same size boilers, but until these are required the room is used for storing coal; the bins now in place hold 800 tons of coal.

On the north side of the boiler house, near its east end, is a self-sustaining steel plate chimney, 175 feet high, 75 inches internal diameter, lined with fire-brick to a height of 80 feet.—This chimney was erected in 1897.

The Reservoir was constructed in 1873 and is about two miles distant from the Pumping Station, the bottom of which is 210 feet above the zero level of the water in the bay, and when the water is carried to a depth of 27 feet, holds 32,952,834 gallons of water.

The regular employees at the Pumping Works are one chief engineer, one machinist, two assistant engineers, three greasers, three firemen, one assistant fireman, one watchman and keeper of grounds, and one janitor. The chief engineer stands a watch of five hours, from 7 to 12 every forenoon; the assistants divide the remainder of each day equally between them.

PUMPING STATISTICS.

There are four pumping engines.

Nos. 1 and 2 are Cornish Bull Pumps, erected in 1868; alike in their dimensions, which are as follows: Steam Cylinders, 60 inches in diameter; Pump Plunger, 20 $\frac{1}{4}$ inches in diameter, each 10-foot stroke, capacity being 165 gallons per stroke, pumping 2,000,000 gallons daily. These pumps are out of commission, the cost for repairs being greater than they are worth.

No. 3 is a Gaskill Horizontal Compound Pumping Engine, erected in 1886, having two H. P. Cylinders 21 inches in diameter, two L. P. Cylinders 42 inches in diameter, two pumps 19 $\frac{1}{2}$ inches in diameter, all 36-inch stroke; capacity being 182 gallons per revolution, pumping 5,000,000 gallons daily.

No. 4 is a Worthington Horizontal Compound High Duty Pumping Engine, erected in 1893, having two H. P. Cylinders 33 inches in diameter, two L. P. Cylinders 66 inches in diameter, two pumps 29 inches in diameter, all 49 $\frac{3}{4}$ -inch stroke; capacity being 552 gallons per stroke, pumping 12,000,000 gallons per day, at a piston speed of 128 feet per minute, against a head of 260 feet.

No. 5 is a Worthington Horizontal Compound High Duty Pumping Engine; erected in 1899, having two H. P. Steam Cylinders each 25 inches in diameter; two L. P. Cylinders, each 50 inches in diameter, two double acting water plungers, each 23 inches in diameter, all 36 inches stroke; capacity being 264 gallons per stroke, pumping 8,000,000 gallons per day, at a piston speed of 136 feet per minute, against a total load of 146 pounds per square inch. (a head of 240 feet).

There are two intakes, one constructed in 1868, of which 52 feet is brick 14 ft in diameter, 590 ft is wood 4 $\frac{1}{4}$ ft in diameter and 333 ft is boiler iron 4 ft in diameter, making a total length of 975 feet. The top of the outer end of this intake is four feet below the zero level of the bay, and as it approaches the shore ascends till the top is only two feet above the zero level of the bay. *This intake has not been used since the new one was completed, and as the part made of wood has not been submerged for some time it is undoubtedly past use.* The second intake was completed in 1896. It is made of cast iron 60 inches internal diameter, 8,307.18 feet long, buried in the bottom of the bay; at no place is there less than three feet of earth over its top. The outer end terminates in an octagonal crib, 40 feet being its extreme width and 8 feet high, the top being 13 feet below the zero level of the bay. So far as we know, this is the longest single piece of submerged 60-inch cast iron pipe in the world.

The standpipe was erected in 1868. It is five feet in diameter and 259.65 feet in height. A spiral staircase surrounds it and all enclosed in brick. So far as we know, this the the tallest standpipe in the world.

The boiler house was erected in 1897 and is 74 feet wide, 102 feet long, and 25 feet from floor line to bottom of cords to roof. On the north side eight horizontal tubular boilers are installed in batteries of two each. The boilers are 72 inches in diameter, 18 feet long, without domes, and contain eighty 4-inch lap welded tubes, capable of carrying 150 lbs. pressure to the square inch.

On the south side of the house can be erected an equal number of the same size boilers, but until these are required the room is used for storing coal; the bins now in place hold 800 tons of coal.

On the north side of the boiler house, near its east end, is a self-sustaining steel plate chimney, 175 feet high, 75 inches internal diameter, lined with fire-brick to a height of 80 feet.—This chimney was erected in 1897.

The Reservoir was constructed in 1873 and is about two miles distant from the Pumping Station, the bottom of which is 210 feet above the zero level of the water in the bay, and when the water is carried to a depth of 27 feet, holds 32,952,934 gallons of water.

The regular employees at the Pumping Works are one chief engineer, one machinist, two assistant engineers, three greasers, three firemen, one assistant fireman, one watchman and keeper of grounds, and one janitor. The chief engineer stands a watch of five hours, from 7 to 12 every forenoon; the assistants divide the remainder of each day equally between them.

FIRE HYDRANTS PLACED IN 1899.

STREET.	LOCATION.	SIZE.	STYLE.	REMARKS.
Second.....	N. W. Corner Holland	6-inch	Matthews	In place of West Jersey.
Ninth	N. W. Corner Liberty.....	6-inch	"	
Tenth.....	177 feet East of Cranberry	6-inch	"	
"	N. E. Corner Raspberry	6-inch	"	
"	N. E. Corner Cherry	6-inch	"	
Twelfth	N. E. Corner of Liberty.....	6-inch	"	In place of 4-inch Matthews.
"	N. E. Corner Plum	6-inch	"	
"	313 feet East of Cascade	4-inch	"	
"	N. E. Corner Cascade.....	6-inch	"	In place of 4-inch Matthews.
"	331 ⁶ feet West of Cascade.....	4-inch	"	
"	N. E. Corner Raspberry.....	6-inch	"	In place of 4-inch Matthews.
Thirteenth	N. W. Corner Wallace	4-inch	"	In place of 4-inch Matthews.
Fourteenth.....	242 ¹⁰ feet West of Holland.....	.....	"	In place of Bay State.
Nineteenth.....	265 feet East of Cascade.....	4-inch	"	4-inch Matthews taken out.
Twenty-third	338 feet East of Wayne	4-inch	"	
Twenty-fourth	148 ⁷ feet West of Perry .....	.....	"	4-inch Matthews taken out.
"	N. W. Corner Ash.....	4-inch	"	
"	N. W. Corner Reed.....	4-inch	"	
"	N. E. Corner Chestnut	6-inch	"	
"	N. E. Corner Perry.....	4-inch	"	
Tw'ty- seventh	228 ¹ feet West of Raspberry.....	6-inch	"	
Thirty-second	N. E. Corner Hazel	6-inch	"	
Payne Avenue	N. E. Corner Eighth	6-inch	"	
Wayne.....	98 feet North of Eighth	6-inch	"	
Ash	N. E. Corner Twenty-seventh.....	6-inch	"	
Wallace.....	S. E. Corner Twenty-sixth	6-inch	"	In place of Pittsburg.
Holland	S. E. Corner Fourth.....	6-inch	"	In place of West Jersey.
French.....	S. E. Corner Twenty-Fourth.....	6 inch	"	
Poplar.....	97 feet North of Third	4-inch	Bay State.	
"	468 feet North of Sixteenth.....	6-inch	Matthews	
Plum	S. E. Corner of Twenty-fifth.....	4-inch	"	
"	N. E. Corner Twenty-third	6-inch	"	In place of Bay State.
Cascade	N. E. Corner Twentieth	6-inch	"	
Raspberry.....	S. E. Corner Sixteenth	6-inch	"	
"	N. E. Corner Brown Avenue.....	6 inch	"	
"	163 ¹ feet South of Twenty-second....	6-inch	"	4-inch Bay State taken out.
Lake Road.....	234 ⁰ feet West of Payne Avenue	6-inch	"	
"	180 ⁵ feet West of Cranberry	6-inch	"	

SUMMARY OF FIRE
HYDRANTS PLACED AND REMOVED IN 1899.

	PLACED.	SIZE.	NUMBER.	
STYLE—				
Matthews.....		4-inch.	9	
Matthews.....		6-inch.	25	
Bay State... ..		4-inch.	1	
			<hr/>	35
	REMOVED.			
STYLE—				
Matthews.....		4-inch.	5	
West Jersey.....		4-inch.	2	
Bay State.....		4-inch.	3	
Pittsburgh		4-inch.	1	
			<hr/>	11
	Net increase			<hr/> 24
	Number in use Dec. 31, 1898			543
	Total in use Dec. 31, 1899.....			<hr/> 567

Main Pipe Laid in 1899.

LOCATION.	SIZES.					REMARKS.
	1 in 1½ in.	2 in.	4 in.	6 in.	12 in. 20 in. 24 in.	
	Feet. In. Feet. In. Feet. In. Feet. In. Feet. In. Feet. In. Feet. In.					
Second St., from west of Plum eastward.....			27			
Second St., from Parade eastward.....			416			
Second St., N. W. cor. Holland.....				12 3		Hyd. B. place of 9 ft. 4-in. hyd. b.
Third St., 272.7 ft. east of Sassafras.....		6 2				Blow-off for 20-in. m. Place of 1,937.6 ft. 4-in. Place of 262.9 ft. 6-in. Place of 237 ft. ¾-in.
Third St., from Holland to Sassafras.....					2200 3	
Fourth St., from Wallace westward.....					87	
Fourth St., bet. German and Parade.....	478 3					
Fifth St., bet. Reed and Wayne.....					25	
Fifth St., 393.6 ft. east of Reed.....			6 4			Hyd. B. 6¼ ft. 4-in H. R., taken out 272.6 ft. east of Reed.
Lake Road, from Hess avenue eastward.....					416	Hydrant Branch.
Lake Road, bet. East and Penn avenue.....					36	
Lake Road, 280 ft. east of city line.....					9	
Eighth St., bet. Hess and Payne avenue.....					127	
Lake Road, from Cranberry westward.....					1844	
Ninth St., from Liberty westward.....					176	
Ninth St., N. W. cor. Liberty.....					5 6	Hydrant Branch.
Tenth St., from Raspberry westward.....					522	
Tenth St., 177 ft. east of Cranberry.....					5 9	Hydrant Branch.
Tenth St., bet. Cascade and Raspberry.....					249	
Tenth St., N. E. cor. Raspberry.....					6	Hydrant Branch.
Tenth St., N. E. cor. Cherry.....					9 6	Hydrant Branch.
Twelfth St., N. E. cor. Liberty.....					13 2	Hyd. B. place of 13.17 4-in hyd. b.
Twelfth St., N. E. cor. Plum.....					13 2	Hydrant Branch.
Twelfth St., 313 ft. east of Cascade.....					13 3	Hydrant Branch.
Twelfth St., N. E. cor. Cascade.....					13 3	Hyd. B. place of 13.8 ft. 4-in. hyd. b.

WATER WORKS, IN THE CITY OF ERIE.

Twelfth St., 331 ft. west of Cascade.....	13 3	.....	Hydrant Branch.
Twelfth St., from Poplar to Cranberry.....	2267 8	.....	In place of 6-inch.
Twelfth St., N. E. cor. Raspberry.....	13 6	.....	Hyd. B. place of 13 ft. 4-in. hyd. b.
Thirteenth St., from main on Holland west'd.	39	.....	In place of 39 ft. 4-in
Fourteenth St., from west of Holland east'd.	315	.....
Nineteenth St., intersection of Cherry.....	27 8	18	
Nineteenth St., from Cascade eastward.....	286	.....	Hydrant Branch.
Nineteenth St., 265 ft. east of Cascade.....	9	.....
Brown Ave., from Raspberry to Cranberry.....	794	.....	*Hydrant Branch.
Twenty-first St., bet. Rasp. and Cranberry.....	36	.....
Twenty-second St., from Perry to East ave.	758 8	.....
Twenty-third St., from Wayne eastward.....	356	.....
Twenty-third St., 338 ft. east of Wayne.....	11	.....	Hydrant Branch.
Twenty-fourth St., N. W. cor. Ash.....	9	.....	Hydrant Branch.
Twenty-fourth St., N. W. cor. Reed.....	9	.....	Hydrant Branch.
Twenty-fourth St., N. E. cor. Chestnut.....	10 10	.....	Hydrant Branch.
Twenty-fourth St., N. E. cor. Perry.....	9 4	.....	Hydrant Branch.
Twenty-fourth St., from west of Perry east'd.	645	.....
Twenty-fifth St., from German eastward.....	138	.....
Twenty-fifth St., 115 ft. east of Germ. east'd.	171	.....
Twenty-sixth St., bet. Wallace and Ash.....	286	.....
Twenty-seventh St., from Raspberry west'd.	267 4	.....
Twenty-ninth St., from Cherry to Maple.....	205	.....
Thirty-second St., from Maple to Hazel.....	290	.....
Thirty-second St., N. E. cor. Hazel.....	8 8	.....	Hydrant Branch.
East Ave., from Buffalo road northward.....	115 2	.....
Wayne St., from Seventh southward.....	271	.....
Wayne St., 98 ft. north of Eighth.....	3 6	.....	Hydrant Branch.
Ash St., N. E. cor. Twenty-seventh.....	9 7	.....	Hydrant Branch.
Wallace St., bet. Twentieth and Twenty-first.....	72 6	.....
Wallace St., from 224 ft. north of Fifth n'th'd.....	313 6	.....
Cedar St., from Eighth northward.....	146	.....
Holland St., S. E. cor. Eleventh.....	10	.....	Hyd. B. place of 9 ft. 4-in. hyd. b.
Holland St., N. E. cor. Fourteenth.....	8	.....	Hyd.B. place of 12.2 ft. 4-in. hyd. b.

Main Pipe Laid in 1899, Continued.

LOCATION.	SIZES.							REMARKS.
	1 in	1½ in.	2 in.	4 in.	6 in	12 in.	20 in. 24 in.	
	Feet in.	Feet in.	Feet in.	Feet in.	Feet in.	Feet in.	Feet in.	
Holland St., from Eleventh southward.....					1164			In place of 4-inch.
Holland St., from Twenty-eighth southward.					97 7			
Holland St., from Second northward.....						560		Hydrant Branch.
French St., S. E. cor. Twenty-fourth.....					9 6			In place of 4-inch.
State St., from Hill road southward.....	140 1							
Sassafras St., bet. 24th and 25th.....				92				
Cherry St., from Nineteenth to Twenty-sixth.							2333	
Cherry St., Intersection of Twenty-sixth.....			38 5					Blow-off for 24-in. m.
Poplar St., bet. Second and Third.....					48			
Poplar St., 97 ft. north of Third.....					9			Hydrant Branch.
Poplar St., 468 ft. north of Sixteenth.....					9 6			Hydrant Branch.
Poplar St., bet. 22nd and 23rd.....					193			
Poplar St., between Fourth and Fifth.....					104			
Liberty St., bet. Seventh and Eighth.....					103 6			
Plum St., from Second southward.....				170 6				
Plum St., from Twenty-sixth to Twenty-fifth.					316			
Plum St., N. E. cor. Twenty-third.....					9 6			Hyd. B. place of 9 ft. 4-in. hyd. b.
Cascade St., N. E. cor. Twentieth.....					9 7			Hydrant Branch.
Raspberry St., S. E. cor. Sixteenth.....					8 4			Hydrant Branch.
Raspberry St., bet. 22nd and Brown ave.....					115 8			
Raspberry St., Intersection of Twenty-fourth					43 6			
Hazel St., from Thirty-second southward....					110			
Hess Ave., from Eighth to Lake road.....					1118			
Payne Ave., bet. Eighth and Tenth.....					505			15-ft. 2-in. abandoned.
Payne Ave., N. E. cor. Eighth					8 6			Hydrant Branch.
Total	140	478 3	44 7	758 10	13156	2855	42200	32351

WORTHINGTON 8,000,000 GALLON, HORIZONTAL, COMPOUND, HIGH DUTY PUMPING ENGINE,
STEAM CYLINDERS.

Summary of Main Pipe Laid and Removed in 1899.

PIPE LAID—		Feet.	Inches.
1-inch.....		140	
1½ “		478	3
2 “		44	7
4 “		758	10
6 “		13,156	
12 “		2,855	4
20 “		2,200	3
24 “		2,351	
		Total, 21,984 3	
PIPE REMOVED—			
¾-inch.....		237	
2 “		15	
4 “		3,786	6
6 “		2,530	5
		Total, 6,568 11	
			Feet. Inches.
		Net total.....	15,415 4
		Or 2 miles	4,855 4
Previously reported.....		100 miles	3,849 5
Grand total		103 miles	3,424 9

CROSSES PLACED IN 1899.

SIZE.	NUMBER.
4 x 4-inch.. .. .	1
6 x 6-inch.. .. .	17
12 x 6-inch.. .. .	6
12 x 12-inch.. .. .	1
20 x 6-inch.. .. .	2
20 x 12-inch.. .. .	2
24 x 12-inch.. .. .	1—
	30

CROSSES REMOVED IN 1899.

SIZE.	NUMBER.
4 x 4-inch.. .. .	6
6 x 4-inch.. .. .	5
6 x 6-inch.. .. .	3—
	14
	—
Net increase.. .. .	16

TEES PLACED IN 1899

SIZE.		NUMBER.
4 x	4-inch.. .. .	1
6 x	4-inch.. .. .	1
6 x	6-inch.. .. .	19
12 x	6-inch.. .. .	8
20 x	6-inch.. .. .	1
24 x	12-inch. . . .	1— 31

TEES REMOVED IN 1899.

SIZE.	NUMBER.
4 x 3-inch.. .. .	1
4 x 4-inch.. .. .	3
6 x 4-inch.. .. .	5—
	9
	--
Net increase.. .. .	22

Stop Valves Placed in 1899.

Street.	Where Located.	Size.	Style.	Remarks.
			Eddy.	
Second.....	West line of Plum.....	4	"	
"	West line of Holland....	4	"	
"	East line of Parade ...	4	"	
Third	East line of State.	20	"	
"	{ 272 ⁷ ft. E. line of Sass. }	2	Hays.	{ On Blow Off for 20
"	{ 22 ⁸ ft. S of N line of 3d }			{ in Main.
"				{ Taken out, 4 in Lud-
Fourth	West line of Wallace....	6	Eddy	{ low W. line of Sass.
"	East line of German ...	6	"	{ Taken out, 4 in. Ed-
Lake Road.....	East line of Hess Ave	6	"	{ dy E. line of Sass.
Eighth.....	West line of Chestnut..	4	"	{ In Place of Old
"	East line of Walnut....	4	"	{ 4 inch Eddy.
"	West line of Cranberry.	6	"	
Ninth	West line of Liberty ..	6	"	
Tenth	West line of Raspberry	6	"	
Eleventh	West line of Holland....	4	"	
Twelfth	West line of Holland....	6	"	
"	West line of Liberty....	12	"	{ In Place of 6 inch
"	West line of Poplar... 12	"	"	{ Eddy.
"	West line of Plum..... 12	"	"	
"	West line of Cascade... 12	"	"	In Place of 6 in. Eddy.
Thirteenth	West line of Holland....	6	"	In Place of 4 in. Eddy.
Fourteenth	West line of Holland....	6	"	
"	East line of Holland....	6	"	
Buffalo Road...	South line of 19th.....	4	"	
Nineteenth	West line of Cherry.... 12	"	"	
"	East line of Cascade.	6	"	
Brown Avenue .	West line of Raspberry	6	"	
"	East line of Cranberry.	6	"	
Twenty-second..	West line of East Ave..	6	"	
"	East line of Perry.....	6	"	
"	West line of Perry.....	6	"	
Twenty-third ..	East line of Wayne....	6	"	{ In Place of 4 in.
Twenty-fourth..	2 ⁴ ft. East of Chestnut.	4	"	{ Abandoned; East
"	West line of Perry.	6	"	{ line of Chestnut.
"	East line of Perry....	6	"	
Twenty-fifth ...	East line of German....	6	"	
Twenty-sixth...	East line of Wallace....	6	"	
"	West line of Cherry ... 12	"	"	
Twenty-seventh.	West line of Raspberry	6	"	
Twenty-ninth	West line of Cherry ...	6	"	
Thirty-second	West line of Maple ...	6	"	
Payne Avenue .	South line of 8th..	6	"	
Hess Avenue...	South line of 6th	6	"	
East Avenue...	North line of Buffalo R.	6	"	
Wayne.....	South line of 7th....	6	"	
Wallace.	North line of 4th.	6	"	
Parade	South line of 19th.....	6	"	
Holland.....	South line of 19th.....	4	"	
"	North line of 12th.....	6	"	In Place of 4 in. Eddy.
"	South line of 12th.....	6	"	In Place of 4 in. Eddy.
"	North line of 14th... ..	6	"	
"	South line of 14th	6	"	In Place of 4 in. Eddy.

Stop Valves Placed in 1899.---Continued.

Street.	Where Located.	Size.	Style.	Remarks.
"	South line of 28th	6	"	{ Taken Out, 4 in. Eddy, North line of 2nd
"	432 ^a ft. North of 2nd	12	"	
French.	South line of 19th	6	"	
French...	North line of 3rd	4	Eddy.	
"	South line of 3rd	4	"	
State.	South line of 19th	6	"	
"	South line of 3rd	4	"	
"	North line of 3rd	6	"	
"	South line of 3rd	6	"	
Peach	9 ² ft. South of 19th	6	"	
"	North line of 3rd	4	"	
"	South line of 3rd	4	"	
Sassafras	South line of 19th	4	"	
"	48 ft. South of 24th	4	"	
"	14 ft. E of W. line of Sas.	...	"	
"	48 ft. South of 24th	4	"	
"	1 ft. E of W line of Sass.	...	"	
Chestnut	16 ⁹ ft. N of S line of 17th	4	"	
"	23 ft. W of E line of Chest.	...	"	
"	625 ft. South of 12th	4	"	In place of 4 in. Lud.
"	North line of 18th	4	"	In place of 4 in. Eddy
Cherry	24 ⁶ ft. N of S line of 26th	2	Hays.	{ On Blow off for 24 in. Main.
"	22 ft. E of W line of Ch'y	...	"	
"	1 ⁴ ft. W of E line of Ch'y	2	"	
"	12 ft. N of S line of 26th	...	"	
Poplar	South line of 19th	6	Eddy.	
Plum	North line of 26th	6	"	
Cascade	South line of 19th	6	"	
Raspberry.	North line of Brown Ave.	6	"	
Cranberry	South line of 24th	6	"	

Summary of Stop Valves Placed and Removed in 1899

PLACED.		SIZE.	NUMBER.	
STYLE—				
Hays		2-inch	3	
Eddy		4-inch	20	
Eddy		6-inch	45	
Eddy		12-inch	7	
Eddy		20-inch	1	
Total		—	—	76
REMOVED AND ABANDONED				
Eddy		4-inch	7	
Eddy		6-inch	2	
Ludlow		4-inch	3	
Ludlow		4-inch	1	1
Net increase..		.....	..	63

Connections Made in 1899.

WARDS.	No. feet in.					No. feet in.					No. feet in.					Total Conn.	Total ft. of Pipe.	Inch.
	1 in.	1 in.	1 1/2 in.	2 in.	4 in.	6 in.	1 in.	1 in.	1 1/2 in.	2 in.	4 in.	6 in.	1 in.	1 in.	1 1/2 in.			
First	71	1646									1	27				72	1673	
Second	58	1060	3	1	26	1	4	9			1	27	1	24	6	62	1142	6
Thrd	45	1004	11	1	9	5	2	55	4	93	8					52	1163	
Fourth	38	750	4	1	56	6	1	70	6		1	8				41	885	4
Fifth	61	1104	11						2	54	6					63	1159	5
Sixth	58	950	2				1	33	1	8	6					60	991	8
Seventh	13	105	6	1	7	2	2	27	6	1	9		1	34		18	243	
Total	344	6682	1	4	98	11	7	190	9	8	165	8	3	62	2	368	7257	11

Connections Taken Out in 1899.

First	4	73														4	73	
Second	6	160	6						2	55	11					8	216	5
Thrd	2	19	11						1	1						3	20	11
Fourth	1	97	11													1	57	10
Fifth				1												1		
Sixth	3	54	3													3	54	3
Total	16	495	6	1					3	56	11					20	462	5
Net Increase	328	6276	7	3	98	11	7	190	9	5	108	0	3	62	2	348	6795	6

Connections Renewed and Altered in 1899.

WARDS.	No.	GAIN.	Loss.	
First	36	24	8	Net loss of pipe
Second	47		78	
Third	18		12	Net increase of service pipe in 1899.
Fourth	1	7	2	Service pipe in use Dec. 31st. 1898..
Fifth	4	73	9	
Total	106	99	91	Service pipe in use Dec. 31st. 1899..

Statement of Connections Made to December 31, 1899.

WARD.	IN PAVED STREETS NOT IN USE.										IN USE.										TOTAL.																			
	INCHES IN SIZE.										INCHES IN SIZE.										INCHES IN SIZE.										TOTAL.									
	3	1	1 1/4	4	TOTAL	3	1	1 1/4	2	2 1/4	3	4	6	TOTAL	3	1	1 1/4	2	2 1/4	3	4	6	TOTAL																	
First.	103				103	1419	20		10	11			16	1476	1522	20		10	11			16	1579																	
Second.	240	1	1	1	243	2119	16		27	17			40	2330	2359	17		28	17			41	2473																	
Third.	383	2			385	1902	33		24	25	1		25	2014	2285	35		24	25	1		25	2399																	
Fourth.	200	1			201	1615	29	3	18	26			14	1705	1815	30	3	18	26			14	1906																	
Fifth.	52				52	1198	11	1	11	11			4	1236	1250	11	1	11	11			4	1288																	
Sixth.	69	2		3	74	1320	17		10	9			5	1362	1389	19		10	9			8	1436																	
Seventh.						58	5	1	8	4			3	82	58	5	1	8	4			3	82																	
Total.	1047	6	1	4	1058	9631	131	5	108	103	1	2	107	17	10105	10678	137	5	109	103	1	2	111	17	11163															

Total number reported in 1898..... 10815
Total number made in 1899.....368
Removed and abandoned in 1899..... 20
Net increase in 1899..... 348
Total number in 1899..... 11163

Statement of Meters December 31, 1899.

KIND.	IN USE.										NOT IN USE.										TOTAL.									
	Size in Inches.										Size in Inches.										Size in Inches.									
	8	8 3/4	1	1 1/4	2	3	4	6	Total.	8	8 3/4	1	1 1/4	2	3	4	6	Total.	8	8 3/4	1	1 1/4	2	3	4	6	Total.			
Crown	1	5	2	8	1	2	...	19	...	...	...	...	1	...	...	...	...	1	1	5	2	...	9	1	2	...	20
Columbia	6	7	...	...	...	...	...	13	11	10	...	...	...	...	...	...	...	21	17	17	...	...	...	...	...	...	34
Empire .....	...	...	2	3	...	...	...	5	...	...	...	...	...	...	...	...	...	...	...	...	2	...	3	...	...	...	5
Gem .....	...	...	...	3	...	...	...	3	...	...	...	...	...	...	...	...	...	...	...	...	...	...	3	...	...	...	3
Lambert.....	...	1	...	...	...	...	...	1	...	...	...	...	...	...	...	...	...	...	...	1	...	...	...	...	...	...	1
National .....	...	...	...	1	...	...	...	1	...	...	...	...	...	...	...	...	...	...	...	...	...	1	...	...	...	...	1
Pitts. Disc.....	1	1	...	...	...	...	...	2	...	...	1	...	...	...	...	...	...	1	1	1	1	...	...	...	...	...	3
Thomson.....	3	5	4	3	5	1	4	...	25	...	1	...	1	...	...	...	...	2	3	6	4	4	5	1	4	...	27
Union	4	56	11	15	21	8	9	1	125	2	7	9	1	7	...	1	...	27	6	63	20	16	28	8	10	1	152			
Worthington.....	...	3	7	5	1	1	...	17	...	1	2	...	...	...	...	...	...	3	...	4	9	5	1	1	...	...	20
Total.....	15	78	26	24	41	11	15	1	211	13	19	12	2	8	...	1	...	55	28	97	38	26	49	11	16	1	266			

KIND.	GOOD.										POOR.										TOTAL.									
	Size in Inches.										Size in Inches.										Size in Inches.									
	8	8 3/4	1	1 1/4	2	3	4	6	Total.	8	8 3/4	1	1 1/4	2	3	4	6	Total.	8	8 3/4	1	1 1/4	2	3	4	6	Total.			
Crown	1	5	2	8	1	2	...	19	...	...	...	...	...	1	...	...	...	1	1	5	2	...	9	1	2	...	20
Columbia	16	17	...	...	...	...	...	33	1	...	...	...	...	...	...	...	...	1	17	17	...	...	...	...	...	...	34
Empire .....	...	...	2	3	...	...	...	5	...	...	...	...	...	...	...	...	...	...	...	...	2	...	3	...	...	...	5
Gem .....	...	...	...	3	...	...	...	3	...	...	...	...	...	...	...	...	...	...	...	...	...	...	3	...	...	...	3
Lambert.....	...	1	...	...	...	...	...	1	...	...	...	...	...	...	...	...	...	...	...	1	...	...	...	...	...	...	1
National .....	...	...	...	1	...	...	...	1	...	...	...	...	...	...	...	...	...	...	...	...	...	1	...	...	...	...	1
Pitts. Disc.....	1	1	1	...	...	...	...	3	...	...	...	...	...	...	...	...	...	...	1	1	1	...	...	...	...	...	3
Thomson.....	3	5	4	3	5	1	4	...	25	...	...	...	...	...	...	...	...	2	3	6	4	4	5	1	4	...	27
Union	6	63	20	16	28	8	9	1	151	...	...	...	...	...	...	...	...	1	6	63	20	16	28	8	10	1	152
Worthington.....	...	4	9	5	1	1	...	20	...	...	...	...	...	...	...	...	...	...	...	4	9	5	1	1	...	...	20
Total.....	27	96	38	25	48	11	16	1	261	1	1	...	1	1	...	1	...	5	28	97	38	26	49	11	16	1	266			

Comparative Statement of Water Rates in Twenty-Seven Cities in the United States.

CITY,		WATER WORKS SYSTEM.			METER.		RATES.				TOTALS.	
NAME.	Population.	Flat.	Lowest.	Highest.	Family.	Bath.	Water Closet.	Sprinkling.				
Albany, N. Y.	100,000	8			\$18 00		\$ 2 00				\$20 00	
Allegheny, Penna.	125,000	10			16 25	\$ 3 00	9 00	\$ 5 50			33 75	
Boston, Mass.	520,000		10 3/4	18 3/4	8 00	3 00	10 00	5 00			26 00	
Cambridge, Mass.	87,000		10	30	8 00	4 00	5 00	5 00			22 00	
Chicago, Ill.	1,750,000		8	10	14 50		3 00	3 00			20 50	
Cincinnati, Ohio.	406,000		8 3/4	20	7 50	2 70	8 00	8 94			27 14	
Cleveland, Ohio.	370,000	5 1/2			6 50	2 00	4 00	1 00			13 50	
Dayton, Ohio.	85,000		7	8	6 00	2 00	3 50	6 64			18 14	
Des Moines, Iowa.	68,000		10	30	6 75	3 00	5 00	7 50			22 25	
ERIE, PENNA.	55,000		4	20 00	4 00	3 00	4 50	3 00			14 50	
Fall River, Mass.	98,000		10	28	10 00	5 00	8 00	6 00			29 00	
Grand Rapids, Mich.	90,000		4 3/4	20	6 00	3 00	5 00	11 29			25 29	
Harrisburg, Penna.	60,000		2 1/4	13 1/2	10 50	4 00	3 00	2 00			19 50	
Indianapolis, Ind.	169,155		6	20	9 00	3 00	5 00	7 10			24 10	
Lancaster, Penna.	40,000	5			6 00	3 00	6 00	5 00			20 00	
Lawrence, Mass.	54,500		8	20	5 50	3 40	4 40	3 30			16 60	
Lowell, Mass.	90,000		13 1/2	18 3/4	6 00	3 00	6 00	3 00			18 00	
Milwaukee, Wis.	270,000	6			10 00	3 00	3 50	17 42			33 92	
Philadelphia, Penna.	1,300,000	4			5 00	3 00	2 00	5 00			15 00	
Pittsburg, Penna.	300,000		8	20	13 00	1 00	6 00	8 00			28 00	
Providence, R. I.	150,000		15	20	6 00	5 00	8 00	5 00			24 00	
Reading, Penna.	87,735		2 1/4	50	4 50	2 50	4 00	9 00			20 00	
Rochester, N. Y.	170,000		10	14	5 00	2 00	3 00	4 00			14 00	
Saginaw, Mich.	52,000		6	11	9 00	3 00	4 00	3 00			19 00	
Springfield, Mass.	55,000		7	30	8 00	4 00	6 00	5 00			23 00	
Syracuse, N. Y.	133,000		4 3/4	18 3/4	5 00	4 00	6 00	6 00			21 00	
Worcester, Mass.	102,000		15	25	7 00	5 00	6 00	5 00			23 00	

BASIS OF COMPARISON: { Building—Two stories high; 10 rooms; assessed valuation \$1,500.00 to \$3,000.00.
Family—Six persons. Three faucets and three sinks allowed with each family.
Fixtures—(One bath; two water closets, and faucet for sprinkling.
Lot—Inside lot; 41 1/2 feet front on a 60-foot street; 165 feet or less in depth.

ERIE, PENNA.—Family. \$4.00. Bath tub, \$3.00; each additional, \$1.50. Water closet, \$3.00; each additional, \$1.50. Sprinkling, 41 feet front or less, \$3.00; each additional foot front, 5 cents. For meter rates see page 61.

ALBANY, N. Y. — Two-story dwellings on a lot from 40 feet to 50 feet wide, \$18.00, includes one each bath tub and water closet and sprinkling; each bath and water closet, \$2.00.
 ALLEGHENY, PENNA. — Six-room house, \$10.25; each additional room, \$1.50. Each bath tub, hot and cold water, \$2.00. Water closets, not less

for remainder 5644 sq. ft.)
 HARRISBURG, PENNA. — Family, first openings, 2-story house on street, \$6.50. Sinks, \$2.00. Bath tubs, \$4.00. Water closets, \$3.00. Sprinkling, \$2.00.
 INDIANAPOLIS, IND. — Family, 3 rooms, \$4.00; 6 rooms or less, \$5.00; each additional room, \$1.00. Bath tub, first one, \$3.00; each additional tub, \$2.00. Water closets, first one, \$3.00; each additional closet, \$2.00. Sprinkling, 30 feet and under, \$6.00; each additional foot over 30 ft., 10c.

WOLFFSTEIN 8 000 000 GALLON HORIZONTAL, COMPOUND, HIGH DUTY PUMPING ENGINE
WATER CYLINDER

Report Upon the Worthington 8,000,000 Gallon High Duty Pumping Engine.

Pittsburg, Pa., Oct. 13, 1899.

Messrs. T. W. Shacklett, Clark Olds, Wm. Hardwick, Commissioners of Water Works in the City of Erie, Pa.

Gentlemen:

We beg to report on your 8,000,000 gallon Worthington compound high duty pumping engine No. 1315, installed 1899.

This pumping engine is of the compound condensing high duty type peculiar to the Henry R. Worthington Co. It was tested July 31st. and Aug. 1st, 1899, with the idea of comparing the duties obtained with the specific guarantees, at different rates of speed and capacities, and at different steam pressures. While a greater number of tests were called for in the contract than were actually made, and of greater duration than actually made, it was thought that by taking the extremes of these guarantees, and at least one intermediate test, that it would be sufficient for the purpose of checking all the guarantees.

Owing to the fact that no boiler test was required, and the means for determining the amount of feed water used was rendered extremely simple with the use of a surface condenser, it was not thought necessary to run these tests for longer than about eight hours. It is to be said here that the results hour by hour were so perfectly uniform that the tests were of ample duration.

The pumping engine consists of two high pressure cylinders each 25 inch diameter; two low pressure cylinders each 50 inch diameter; two double acting water plungers each 23 inch diameter, all of 36 inch stroke. Cylinders jacketed on barrels and heads. Surface condenser placed in suction pipe, with attached air pump. Primary heater in main exhaust pipe, delivering water to an auxiliary heater, receiving exhaust steam at atmospheric pressure from auxiliary pumps.

The Results Obtained Are Tabulated Below.

DATES OF TESTS	July 31st.	July 31st. & Aug. 1st.	Aug. 1st.
Length of test.....	9	8	7 hrs.
Average steam pressure at Engine, corrected for elevation of gauge.....	115.8	114.6	96.1 lbs.
Average vacuum	28.	26.61	27.62 ins.
Average water pressure at gauge.	140.07	138.97	97.05 lbs.
Average suction gauge, corrected for connections to vacuum chamber	4.78	5.63	4.65 lbs.
Elevation of water gauge above suction gauge.....	4 4	4 4	4.4 lbs.
Total head on plungers.....	149.25	149.	105.3 lbs.
Average stroke for engine.....	37.78	37.72	37.95 ins.
Total reading of counter.....	5172	10330	2167
Complete revolutions of engine per minute.....	9.58	21.52	5.16
Average piston speed per minute.	60.3	135.3	32.6
Total plunger travel during test.	65126.	129881.	27412.
Total gallons pumped during test, not corrected for slippage.	1,378,700	2,749,567	580,320
Rate of pumping for 24 hours....	3,676,300	8,248,700	1,989,570

DATES OF TESTS.. .. .	July 31st.	July 31st & Aug. 1st.	Aug. 1st.
Excess above contract guarantee of 8,000,000 gal.		3.11 pct.	
Average temperature of air pump discharge.	86.	100.7	79.8
Average temperature of feed water leaving heater during test	129.	139.7	116.5
Averag. temperature of jacket water.	331.	331.5	321.
Average temperature of feed water to boilers corrected for amount of water chargeable to this engine, plus heat con- tained in waste jacket water..	165.	164.5	167.2
Total weight of steam used by main engine cylinders.	28,368.	56,651.	9,250.
Total weight of jacket water.	6,242.	8,427.5	2,996.
Total weight of steam used by auxiliary pumps.	810.	823.	.....
Steam used by entire engines and auxiliary	35,420	65,901.5	12,246 lbs.
Net weight of dry steam used by entire engine and auxiliary, corrected for 1½ pct. of moisture.	34,889	64,913	12,062 lbs.

RESULTS.

The guarantee in regard to duty was based on 100 pounds of coal, based upon an evaporation of 10 pounds of water per pound of coal, from the temperature of the air pump discharge to dry steam at boiler pressure. Now, as the temperature of the air pump discharge is considerably less than the temperature that could be actually delivered by the pumping engine, as set forth in the item, "Average temperature of feed water to boilers," the Worthington Company is entitled to a credit for this amount as follows:

Equivalent evaporation from ac- tual temperature of feed water	10.82	10.66	10.90 lbs.
Coal required to operate this test corrected to equivalent evaporation	3,273	6,182	1,123 lbs.
Foot lbs. of work done.	3,961,096,000	7,886,420,000	1,176,328,000 lbs.
Contract basis of duty lbs. (100 of coal),	121,023,000	127,570,600	104,748,000
Guarantee	100,000,000	110,000,000	90,000,000
Excess over guarantee.	21.02 pct.	15.97 pct.	16.4 pct.
Duty on 1000 lbs. of dry steam to engine and auxiliary.	113,540,000	121,529,000	96,517,500

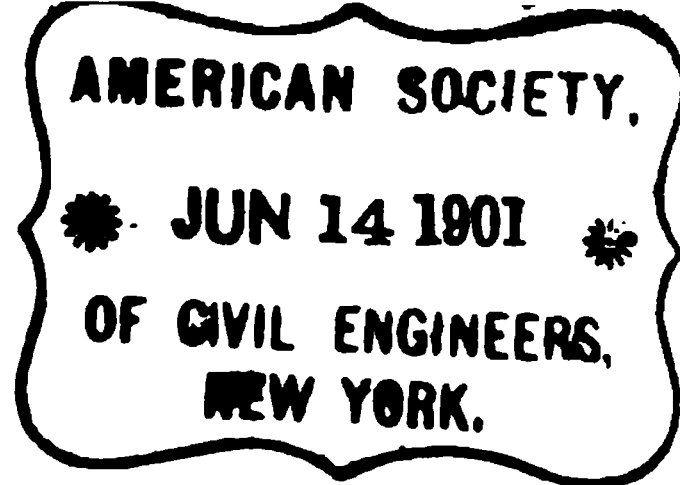
F. R. DRAVO.

Erie, Penn'a., October 14th, 1899.

Entered in full in Minute Book No. 4, pages 962 and 963.

WM. HIMROD, Sec'y.

PRESENTED BY
T.J.R. Coes



34TH

ANNUAL REPORT

OF THE

COMMISSIONERS OF

WATER WORKS,

IN THE CITY OF ERIE,

ERIE, PENN'A,

TO THE

COUNCILS,

FOR THE

YEAR ENDING DECEMBER 31, 1900.

ERIE, PA.
HERALD PRINTING & PUBLISHING CO.,
1901.

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REPORT OF THE COMMISSIONERS OF

PUMPING STATION AS SEEN FROM THE BAY.

Commissioners of Water Works, In the City of Erie, ERIE, PENN'A.

T. W. SHACKLETT,
CLARK OLDS,
G. F. BREVILLIER.

OFFICERS.

CLARK OLDS,
President.

WILLIAM HIMROD,
Secretary and Treasurer.

GEO. C. GENSHEIMER,
Assistant Secretry.

F. A. ROTH,
Chief Engineer at Pumping Station.

R. T. WALKER,
Superintendent of Street Work.

OFFICE, CITY HALL.

OFFICE HOURS. From 8:00 a. m. to 5:00 p. m.; on Mondays to 9:00 p. m.

REGULAR MEETINGS OF THE COMMISSIONERS. Every Saturday at 3:00 p. m., and the first of each month at 11:00 a. m., except when it occurs on Sunday, then they meet the following day. Special meetings when necessary.

COMPLIMENTS OF

WILLIAM HIMROD,

SECRETARY AND TREASURER.

MEMBER AMERICAN WATER WORKS ASSOCIATION.

ANNUAL REPORT.

To the Councils of the City of Erie, Pa.:

GENTLEMEN :

We herewith submit the thirty-fourth annual report of this department, for the year ending December 31, 1900.

RECEIPTS.

Balance in City Treasury Dec. 31, 1899, \$	664 22
From Water Rents :	
Assessments. \$	99,047 97
Meters	22,411 31
Building Permits.....	618 62
Special Permits.....	120 68
	<hr/>
	122,198 58
From other sources.....	2,278 45
	<hr/>
Total.. ..	\$ 125,141 25

DISBURSEMENTS

Construction	\$ 50,678 87
Maintenance	15,681 37
Operating.....	26,187 61
Accounting	8,817 63
Legal.....	395 63
	<hr/>
	101,761 11
Sinking Fund Comm's City of Erie.....	23,000 00
Balance in City Treasury Dec. 31, 1900...	380 14
	<hr/>
Total.....	\$ 125,141 25

The decrease in the receipts from the previous year, as shown by the books, amounts to the sum of \$17,145 44.

On January 1, 1900, the new schedule of water rates went into effect, which reduced the revenues of the department to the amount above stated; nevertheless we were able to pay to the sinking fund commissioners of the city, the sum of \$23,000.00, and to expend for construction the sum of \$50,678.87.

At the pumping station we installed an electric coal carrier and elevator, which greatly reduces the expense of handling coal.

During the past year we laid a little over three and one-half miles of new mains.

The total length of water mains is now nearly 107 $\frac{1}{4}$ miles.

The amount of water pumped last year was 3,124,440,644 gallons, an increase of 402,118,040 gallons over the year 1899.

The average daily pumpage for the year amounted to 8,560,111 gallons, an increase of 1,101,693 gallons over the average daily pumpage for the year 1899.

The daily per capita pumpage was 162.3 gallons, based upon the census report for 1900, which gives the city a population of 52,733.

We estimate that one-half the water pumped is wasted, which waste might be curtailed by the introduction of meters. We recently recommended to your Honorable bodies a reduction of the minimum meter rates, and a change in the rules to allow all water takers, who desire, to take water by meter measurement, but the recommendations were disapproved.

The high service system, embracing all that portion of the city south of Nineteenth street, has been maintained throughout the year in a satisfactory manner.

An average daily pressure of a little over 126 pounds was maintained on the high service system, at the pumping station, which gave to the inhabitants of the southern portion of the city, the same service they would have had, if the surface of the reservoir had been raised sixty-seven feet.

The accounts of this department have not been audited for a period of four years, and we reiterate our request that this important duty be performed annually.

The department is still confronted with the serious problem of the gradual pollution of the bay by the sewage from the city.

The bay, from which our supply of water is taken, is a natural reservoir and settling basin, and if kept unpolluted is of priceless value.

Big Bend is an ideal place for an intake crib, as it is protected by the peninsula from storms. The adjoining water is deep, and at all times clear, transparent and changeable.

The surface of the bay rises and falls in unison with the level of the lake, which is affected by the wind. The daily change in the level of the lake is from one to eight inches. Each inch of change in the level of the bay, affects its contents about eighty million gallons. An average daily change in the level of the lake of four inches would change the contents of the bay three hundred and twenty million gallons. These forces of nature are constantly working to keep the bay in its primitive purity.

For the period of twenty years, this department has annually called the attention of your Honorable bodies to the gradual pollution of the water of the bay with the city sewage, and has urged the necessity for the construction of an intercepting sewer or for the changing of the mouth of Mill Creek, so as to discharge its polluted waters into the open lake.

Since we believe the Councils, who have charge of the city sewerage, are responsible for the purity of the water supply, the possible danger to the health of the city, requires that this important question should be seriously considered by them and satisfactorily solved.

Respectfully submitted,

T. W. SHACKLETT,
CLARK OLDS,
G. F. BREVILLIER,

Commissioners.

***Commissioners of Water Works, in the City of Erie from
Organization to December 31, 1900.***

The Commissioners of Water Works, in the City of Erie, are appointed by the Court of Common Pleas of Erie County, Penna., for a term of three years, one member being named annually, in May.

1867	*W. L. Scott,	*Henry Rawle,	Wm. W. Reed.
1868	*John C. Selden.	*Henry Rawle.	Wm. W. Reed.
1869	*John C. Selden.	*Henry Rawle,	Wm. W. Reed.
1870	*John C. Selden,	*Henry Rawle,	Wm. W. Reed.
1871	*†John C. Selden,	*Henry Rawle,	Wm. W. Reed.
1872	Matthew R. Barr,	John Gensheimer,	Wm. W. Reed.
1873	Matthew R. Barr,	John Gensheimer,	Wm. W. Reed.
1874	Matthew R. Barr,	John Gensheimer.	Wm. W. Reed.
1875	Matthew R. Barr,	John Gensheimer,	Wm. W. Reed.
1876	Matthew R. Barr,	John Gensheimer,	Wm. W. Reed.
1877	Michael Liebel,	John Gensheimer,	Wm. W. Reed.
1878	Michael Liebel,	*J. M. Bryant,	Wm. W. Reed.
1879	Michael Liebel,	*J. M. Bryant,	*G. W. F. Sherwin.
1880	Michael Liebel,	*J. M. Bryant,	*G. W. F. Sherwin.
1881	Michael Liebel,	Benjamin Whitman,	*G. W. F. Sherwin.
1882	Michael Liebel,	Benjamin Whitman,	*G. W. F. Sherwin.
1883	Michael Liebel,	Benjamin Whitman,	*G. W. F. Sherwin.
1884	Michael Liebel,	Benjamin Whitman,	*G. W. F. Sherwin.
1885	Michael Liebel,	Benjamin Whitman,	Geo. W. Starr.
1886	C. Kessler,	Benjamin Whitman,	Geo. W. Starr.
1887	C. Kessler,	C. J. Brown,	Geo. W. Starr.
1888	C. Kessler,	C. J. Brown,	Geo. W. Starr.
1889	C. Kessler,	C. J. Brown.	Geo. W. Starr.
1890	C. Kessler,	C. J. Brown,	Geo. W. Starr.
1891	C. Kessler,	C. J. Brown,	Wm. Hardwick
1892	T. W. Shacklett,	C. J. Brown,	Wm. Hardwick.
1893	T. W. Shacklett,	C. J. Brown,	Wm. Hardwick.
1894	T. W. Shacklett,	C. J. Brown,	Wm. Hardwick.
1895	T. W. Shacklett,	‡C. J. Brown,	Wm. Hardwick.
1896	T. W. Shacklett,	Clark Olds,	Wm. Hardwick.
1897	T. W. Shacklett,	Clark Olds,	Wm. Hardwick.
1898	T. W. Shacklett,	Clark Olds,	Wm. Hardwick.
1899	T. W. Shacklett,	Clark Olds.	Wm. Hardwick.
1900	T. W. Shacklett,	Clark Olds,	G. F. Brevillier.

*Dead.

†Mr. Selden resigned before the expiration of his second term; Mr. Barr was substituted by the other Commissioners, and afterward appointed by the Court.

‡C. J. Brown resigned December 28, 1895, having been elected Treasurer of Erie County, Penna. Clark Olds was chosen by the other Commissioners for the unexpired term, on recommendation of the Court, January 2, 1896.

**Officers of Water Works, from Organization to December 31,
1900.**

	President.	Secretary & Treasurer.	Assistant Secretary.
1867	Wm. W. Reed,	*Wm. Brewster,	.....
1868	Wm. W. Reed,	*Wm. Brewster,	.....
1869	Wm. W. Reed,	*J. C. Perkins,	.....
1870	Wm. W. Reed,	*J. C. Perkins,	.....
1871	Wm. W. Reed,	*J. C. Perkins,	.....
1872	Wm. W. Reed,	*J. C. Perkins,	.....
1873	Wm. W. Reed,	*J. C. Perkins,	.....
1874	Wm. W. Reed,	*J. C. Perkins,	.....
1875	Wm. W. Reed,	*J. C. Perkins,	.....
1876	Wm. W. Reed,	*J. C. Perkins,	.....
1877	Wm. W. Reed,	*J. C. Perkins,	.....
1878	Wm. W. Reed,	*J. C. Perkins,	.....
1879	Michael Liebel,	B. F. Sloan,	.....
1880	Michael Liebel,	B. F. Sloan,	.....
1881	*G. W. F. Sherwin,	B. F. Sloan,	.....
1882	*G. W. F. Sherwin,	B. F. Sloan,	.....
1883	*G. W. F. Sherwin,	B. F. Sloan,	.....
1884	Benjamin Whitman,	B. F. Sloan,	Geo. C. Gensheimer.
1885	Benjamin Whitman,	B. F. Sloan,	Geo. C. Gensheimer.
1886	Benjamin Whitman,	B. F. Sloan,	Geo. C. Gensheimer.
1887	Geo. W. Starr,	B. F. Sloan,	Geo. C. Gensheimer.
1888	Geo. W. Starr,	B. F. Sloan,	Geo. C. Gensheimer.
1889	Geo. W. Starr,	B. F. Sloan,	Geo. C. Gensheimer.
1890	Geo. W. Starr,	B. F. Sloan,	Geo. C. Gensheimer.
1891	C. J. Brown,	Wm. Himrod,	Geo. C. Gensheimer.
1892	C. J. Brown,	Wm. Himrod,	Geo. C. Gensheimer.
1893	C. J. Brown,	Wm. Himrod,	Geo. C. Gensheimer.
1894	Wm. Hardwick,	Wm. Himrod,	Geo. C. Gensheimer.
1895	Wm. Hardwick,	Wm. Himrod,	Geo. C. Gensheimer.
1896	T. W. Shacklett,	Wm. Himrod,	Geo. C. Gensheimer.
1897	T. W. Shacklett,	Wm. Himrod,	Geo. C. Gensheimer.
1898	T. W. Shacklett,	Wm. Himrod,	Geo. C. Gensheimer.
1899	Clark Olds,	Wm. Himrod,	Geo. C. Gensheimer.
1900	Clark Olds,	Wm. Himrod,	Geo. C. Gensheimer.

*Dead.

NOTE.—Mr. Brewster was elected June 14, 1867; resigned October 26, 1868, to take effect November 2, 1868; served 1 year, 4 months and 18 days. Mr. Perkins was elected October 26, 1868, to take effect November 2, 1868; resigned March 30, 1878; same accepted December 21, 1878, to take effect January 1, 1879; served 10 years, 1 month and 29 days. Mr. Sloan was elected December 21, 1878, to take effect January 1, 1879; continued in office to June 1, 1891; served 12 years and 5 months. Mr. Himrod was appointed Secretary May 23, 1891, to take effect June 1, 1891. Mr. Gensheimer was appointed Assistant Secretary January 26, 1884.

**Monthly Receipts from all Sources During the Year Ending
December 31, 1900.**

Month.	Assessment.	Meter.	Special.	Plumbing.	Building.	Total.
January.....	\$22,194 50	\$ 3,357 22	3 78	\$ 187 96	\$ 15 48	\$ 25,758 94
February.....	1,887 73	12 75	5 08	15 99	30 58	1,952 13
March.....	434 71	66 21	7 17	24 12	22 25	554 46
April.....	21,587 71	5 602 91	5 00	.....	25 78	27,221 40
May.....	2,193 46	4 72	18 00	89 20	55 23	2,360 61
June.....	583 67	262 07	22 85	103 63	118 36	1,090 58
July.....	22,884 61	6,129 85	15 58	219 76	52 94	29,302 74
August.....	2,027 14	33 07	16 41	708 40	47 28	2,832 30
September.....	191 30	40 51	4 26	10 40	65 63	312 10
October.....	22,783 98	6,859 49	12 80	353 68	117 86	30,127 81
November.....	2,140 21	3 65	8 75	8 21	25 88	2,186 70
December.....	138 95	38 86	1 00	557 10	41 35	777 26
	\$99,047 97	\$22,411 31	\$120 68	\$ 2,278 45	\$ 618 62	\$124,477 03

**Receipts from each Ward during the Year Ending December
31, 1900.**

Ward.	Assessment.	Meter.	Special.	Plumbing.	Building.	Total.
First.....	\$13,549 52	\$ 2,104 98	\$ 13 00	\$ 59 32	\$ 93 42	\$ 15,820 24
Second.....	21,092 48	10,519 10	13 29	549 31	134 69	32,308 87
Third.....	23,678 94	4,920 95	26 57	495 72	171 11	29,293 29
Fourth.....	18,894 56	1,186 47	21 45	59 20	71 43	20,233 11
Fifth.....	9,620 17	2,384 81	38 22	17 68	101 85	12,152 73
Sixth.....	11,331 25	648 91	7 73	734 23	39 96	12,762 08
Seventh.....	881 05	646 09	10 42	362 99	6 16	1,906 71
	\$99,047 97	\$22,411 31	\$120 68	\$ 2,278 45	\$ 618 62	\$124,477 03

**Cash Account of Secretary and Treasurer of Commissioners
of Water Works, in the City of Erie, for the Year End-
ing December 31, 1900.**

Month.	Receipts.	Deposited with Treasurer City of Erie.	Balance in Office at Close of Busi- ness each Month.
January.....	\$ 25,758 94	\$ 22,710 92	\$ 3,048 02
February.....	1,952 13	4,941 33	58 82
March.....	554 46	445 33	167 95
April.....	27,221 40	23,116 42	4,272 93
May.....	2,360 61	6,457 64	175 09
June.....	1,090 58	1,138 28	128 20
July.....	29,302 74	26,509 85	2,921 09
August.....	2,832 30	5,670 39	83 00
September.....	312 10	293 41	101 69
October.....	30,127 81	26,860 61	3,368 89
November.....	22,186 70	5,492 31	63 28
December.....	777 26	840 54	.....
Total.....	\$124,477 03	\$124,477 03	.....

**Statement of Account with Treasurer of the City of Erie, for
the Year Ending December 31, 1900.**

Month.	Received from Sec'y and Treas. Commissioners of Water Works in the City of Erie.	Paid on Warrants of Commissioners of Water Works, in the City of Erie.	Monthly Balances.
Balance from 1899.....	\$ 664 22		
January.....	22,710 92	\$ 11,125 64	\$ 12,249 50
February.....	4,941 33	14,729 09	2,461 74
March.....	445 33	2,414 52	492 55
April.....	23,116 42	13,810 77	9,798 20
May.....	6,457 64	5,870 14	10,385 70
June.....	1,138 28	9,445 84	2,078 14
July.....	26,509 85	18,897 86	9,690 13
August.....	5,670 39	8,012 12	7,348 40
September.....	293 41	6,982 35	659 46
October.....	26,860 61	7,634 73	19,885 34
November.....	5,492 31	11,974 81	13,402 84
December.....	840 54	13,863 24	380 14
Total.....	\$125,141 25	\$124,761 11	\$ 380 14

**Amount Collected Annually for Water Furnished, showing
Total Collections, also the Increase and Decrease
each Year since the Commencement
of the Water Works.**

Year Ending Dec. 31st.	RECEIVED.		ANNUAL.	
	Annually.	Totals.	Increase.	Decrease.
1869.....	\$ 4,264 47	.....	.....	.....
1870.....	9,237 30	\$ 13,501 77	\$ 4,972 83	.....
1871.. ..	18,138 08	31,639 85	8 900 78	.....
1872.. ..	21,652 68	53,292 53	3,514 60	.....
1873.....	25,560 40	78,852 93	3,907 72	.....
1874.. ..	27,938 90	106,791 83	2,378 50	.....
1875.....	29,639 38	136,431 21	1,700 48	.....
1876.....	31,048 76	167,479 97	1,409 38	.....
1877.....	32,276 57	199,756 54	1,227 81	.....
1878.....	29,636 01	229,392 55	.....	\$ 2,640 56
1879.....	33,343 20	262,735 75	3,707 19	.....
1880.....	37,385 00	300,120 75	4,041 80	.....
1881.....	40,385 87	340,506 62	3,000 87	.....
1882.....	43,818 73	384,325 35	3,432 86	.....
1883.....	48,269 89	432,595 24	4,451 16	.....
1884.. ..	51,852 78	484,448 02	3,582 89	.....
1885.....	53,550 35	537,998 37	1,697 57	.....
1886.....	58,725 00	596,723 37	5,174 65	.....
1887.....	67,121 92	663,845 29	8,396 92	.....
1888.....	73,197 03	737,042 32	6,075 11	.....
1889.....	81,110 68	818,153 00	7,913 65	.....
1890.....	87,279 96	905,432 96	6,169 28	.....
1891.....	93,891 55	999,324 51	6,611 59	.....
1892.....	105,527 03	1,104,851 54	11,635 48	.....
1893.....	111,247 45	1,216,098 97	5,720 40	.....
1894.....	111,821 94	1,327,920 91	574 51*	.....
1895.....	116,927 63	1,444,848 54	5,105 69	.....
1896.....	121,442 94	1,566,291 48	4,515 31	.....
1897.....	124,106 61	1,690,398 09	2,663 67	.....
1898.....	131,303 48	1,821,701 57	7,196 87	.....
1899.. ..	139,344 02	1,961,054 59	8,040 54	.....
1900.....	122,198 58	2,083,253 17	.....	\$ 17,145 44+

*Meter rates for water changed from a sliding scale of 6 cents to 10 cents per 1,000 gallons, according to amount consumed, to a flat rate of 6 cents per 1,000 gallons, causing a reduction in receipts of \$5,000.00.

+Meter rates changed from six cents per one thousand (1,000) gallons to twenty (20) cents for each one thousand (1000) gallons for the first Twenty-five Thousand (25,000) gallons, and Four (4) cents for each one thousand (1,000) gallons consumed thereafter during each current quarter. Same took effect July 1, 1899. Family rates changed from \$5.00 per annum to \$4.00, taking effect January 1, 1900. These changes in rates account for the heavy decrease in the receipts for 1900.

STATEMENT OF WARRANTS ISSUED IN 1900.**January.****TO PAY VOUCHER.**

Date.	No.	Of	For	Amount.
2	10182	Erie Mfg. & Supply Co.,	Lead Pipe and Solder.....\$	398 48
6	10183	Geo. C. Gensheimer, Ass't Sec'y,	Sundries.....	9 28
	10184	Pay Roll, Street Work,	Disbursed by M. L. Whitley, Clerk.....	184 20
13	10185	H. F. Watson Co.,	Roofing Paper.....	1 05
	10186	Mayer Bros.,	Repairing Cut in Pavement.....	1 46
	10187	Consumers' Ice & Cold Storage Co.,	Ice.....	1 75
	10188	Geo. Carroll & Bro. Co.,	Lumber.....	2 12
	10189	Edison Construction and Supply Department,	Inner Air Globes.....	3 00
	10190	Times Publishing Company,	One Year's Subscription.....	3 00
	10191	Geo. Schlindwein,	Repairing Harness	3 50
	10192	Keystone Electric Company,	Carbon, Brushes, Etc.....	3 90
	10193	The Erie Gas Company,	Coke.....	3 92
	10194	Henry R. Worthington,	Tell Tale Rod.....	4 05
	10195	Standard Brick Works,	Brick.....	4 40
	10196	The Atlantic Refining Co., Eclipse Station,	Oil.. ..	6 00
	10197	Dispatch Publishing Company,	One Year's Subscription.....	6 00
	10198	F. J. Hampel,	Repairs to Electric Light Plant.....	6 25
	10199	A. S. Pinney,	Hardware and Tools.....	6 35
	10200	Lyman Felheim,	Lumber.....	6 81
	10201	The Flickinger Roofing and Cornice Co., Limited,	Repairing Tools.....	7 70
	10202	James L. Firman,	Teaming	8 78
	10203	Globe Iron Foundry Co.,	Castings.....	10 57
	10204	C. A. Taylor,	Horseshoeing.....	11 40
	10205	Johannesen Manufacturing Co.,	Desk.....	12 00

January—Continued.

TO PAY VOUCHER.

Date.	No.	Of	For	Amount.
	10206	G. J. Gebhardt,	Coal and Wood.....	\$ 13 75
	10207	Mehl & Sapper,	Hardware and Tools.....	15 27
	10208	Conrad J. Brown,	Oats.. ..	17 28
	10209	Wm. Schade,	Repairing Engine and Tools.....	21 81
	10210	Erie City Iron Works,	Repairing Boilers.....	56 10
	10211	Hays Manufacturing Co.,	Cocks, Fittings, Valves, Etc.....	59 66
	10212	Erie Oil Works,	Oil.....	84 94
	10213	Erie Machine Shops,	Repairing Engines and Boilers.....	84 97
	10214	Erie Manufacturing and Supply Co.,	Waste, Packing, Grease, Etc.....	111 64
	10215	Momeyer & Graf,	Coal and Coke.....	625 31
	10216	Union Water Meter Company,	Meters.....	723 00
	10217	R. D. Wood & Co.,	Fire Hydrants and Stop Valves.....	1,562 00
	10218	The Constable Bros. Co.,	Repairing Buildings.....	62 77
	10219	Geo. C. Gensheimer, Ass't Sec'y,	Sundries.....	9 15
	10220	James L. Firman,	Hay.....	17 63
	10221	Pay Roll, Street Work,	Disbursed by M. L. Whitley, Clerk.....	162 27
	10222	John Schweinhard,	Damage to Wagon.....	5 25
	10223	United States Cast Iron Pipe and Foundry Company,	Pipe and Specials.....	4,392 68
20	10224	J. M. Dunn,	Water Rent Returned.....	11 29
	10225	Geo. C. Gensheimer, Ass't Sec'y,	Sundries.....	27 91
	10226	Pay Roll, Street Work,	Disbursed by M. L. Whitley, Clerk.....	263 50
	10227	The Lake Shore & Michigan Southern Ry. Co.,	Freight.....	70 35
27	10228	Geo. C. Gensheimer, Ass't Sec'y,	Sundries.....	18 26
	10229	Pay Roll, Street Work,	Disbursed by M. L. Whitley, Clerk.....	291 22
31	10230	Pay Roll, Pumping Station,	Disbursed by Geo. C. Gensheimer, Ass't Sec'y....	845 00
	10231	Pay Roll, Office and Inspectors,	Disbursed by Geo. C. Gensheimer, Ass't Sec'y...	866 66
Total.....				\$11,125 64

February.

TO PAY VOUCHER.

Date.	No.	Of	For	Amount.
3	10232	Geo. C. Gensheimer, Ass't Sec'y,	Sundries.....\$	76 82
	10233	Pay Roll, Street Work,	Disbursed by M. L. Whitley, Clerk.....	162 37
10	10234	Adolph Brugger,	Wooden Plugs.....	1 55
	10235	Keystone Electric Company,	Repairs to Electric Light Plant.....	2 00
	10236	The Erie Gas Company,	Coke.....	2 16
	10237	Erie Heating and Plumbing Company,	Plumbing Material.....	2 20
	10238	W. E. Hayes & Co ,	Lamp.....	2 50
	10239	McIntire & Tanner,	Plumbing Material.....	3 25
	10240	Warfel & Arbuckle,	Horse Blankets.....	4 00
	10241	New York & Penn'a. Telephone & Telegraph Co.,	Telephone Rental.....	6 00
	10242	A. S. Pinney,	Hardware and Tools.....	6 13
	10243	G. J. Gebhardt,	Coal and Wood.....	7 00
	10244	C. Kessler,	Brooms and Soap.....	8 00
	10245	Edison Construction and Supply Department,	Repairs to Electric Light Plant.....	9 77
	10246	Mehl & Sapper,	Hardware and Tools.....	9 74
	10247	O. C. Thayer & Son,	Cement and Clay.....	11 00
	10248	National Meter Company,	Repairs to Meter.....	13 00
	10249	E. J. Riblet,	Shop Rent.....	20 00
	10250	The Himrod Engraving Company,	Stationery.....	27 50
	10251	Erie Machine Shops,	Boiler and Engine Repairs.....	43 12
	10252	Union Water Meter Company,	Repairs to Meters.....	44 65
	10253	Skinner Engine Company,	Oil Reservoir.....	75 00
	10254	The Atlantic Refining Company, Eclipse Station,	Oil.....	108 27
	10255	Henry R. Worthington,	Valves.....	128 50
	10256	Ashby & Vincent,	Books and Stationery.....	132 55
	10257	Erie Manufacturing and Supply Co.,	Grease, Tools, Waste, Etc.....	246 66
	10258	Hays Manufacturing Co.,	Fittings.....	260 45

February—Continued.**TO PAY VOUCHER.**

Date.	No.	Of	For	Amount.
	10259	James L. Firman,	Teaming.....	\$ 4 46
	10260	Winschel & Company,	Rubber Matting.....	4 79
	10261	R. T. Walker,	Horse Shoeing.....	5 60
	10262	Geo. C. Gensheimer, Ass't Sec'y,	Sundries.....	32 14
	10263	Pay Roll, Street Work,	Disbursed by M. L. Whitley, Clerk.....	155 45
	10264	Momeyer & Graf,	Coal.....	112 69
17	10265	Geo. C. Gensheimer, Ass't Sec'y,	Sundries.....	19 75
	10266	Pay Roll, Street Work,	Disbursed by M. L. Whitley, Clerk.....	167 16
	10267	United States Cast Iron Pipe and Foundry Co.,	Pipe and Specials.....	2,698 69
24	10268	Geo. C. Gensheimer, Ass't Sec'y,	Sundries.....	56 63
	10269	Isadore Sobel, Postmaster,	Postal Cards.....	152 25
	10270	Pay Roll, Street Work,	Disbursed by M. L. Whitley, Clerk.....	145 25
	10271	Charles F. Bengel,	Painting Engine No. 5.....	150 00
	10272	Henry R. Worthington,	On Acct. Engine No. 5.....	7,438 38
28	10273	Clark Olds,	Services as Commissioner, 2 Months.....	150 00
	10274	William Hardwick,	Services as Commissioner, 2 Months.....	150 00
	10275	T. W. Shacklett,	Services as Commissioner, 2 Months.....	150 00
	10276	Pay Roll, Pumping Station,	Disbursed by Geo. C. Gensheimer, Ass't Sec'y...	845 00
	10277	Pay Roll, Office and Inspectors,	Disbursed by Geo. C. Gensheimer, Ass't Sec'y...	876 60
Total.....				<u>\$14,729 09</u>

March.**TO PAY VOUCHER.**

Date.	No.	Of	For	Amount.
3	10278	Geo. C. Gensheimer, Ass't Sec'y.		
		Sundries.....	\$	12 85
	10279	Pay Roll, Street Work,		
		Disbursed by M. L. Whitley, Clerk.....		223 60
10	10280	Murphy Bros.,		
		Repairing Oil Can, Torch, Etc.....		2 00
	10281	Thompson Meter Co.,		
		Repairing Meter.....		2 05
	10282	Consumers' Ice and Cold Storage Co.,		
		Ice.....		2 80
	10283	Erie Window Glass Co.,		
		Paint and Brushes.....		3 35
	10284	Skinner Engine Company,		
		Sight Feed Lubricator.....		3 50
	10285	Jas. McCrea & Co.,		
		Gaskets.....		3 90
	10286	Wm. F. Nick & Son,		
		Paints, Brush, Etc.....		6 30
	10287	C. Kessler,		
		Soap, Baskets and Brushes.....		6 35
	10288	A. S. Pinney,		
		Hardware and Tools.....		10 19
	10289	Mehl & Sapper,		
		Hardware and Tools.....		10 70
	10290	G. J. Gebhardt,		
		Coal.....		11 50
	10291	Lyman Felheim,		
		Lumber and Meter Boxes.....		11 70
	10292	The Flickinger Roofing and Cornice Co., Limited.		
		Repairing Engines.....		15 31
	10293	Erie Electrotpe Co.,		
		Electrotypes and Half Tones.....		18 43
	10294	O. C. Thayer & Son,		
		Cement, Fire Brick, Etc.....		19 95
	10295	E. J. Riblet,		
		Shop Rent.....		20 00
	10296	A. H. Mueller & Co.,		
		Atlas of Erie.....		25 00
	10297	Ashby & Vincent,		
		Books and Stationery.....		25 13
	10298	Warner Bros.,		
		Matting.....		31 69
	10299	Herald Printing and Publishing Company,		
		Printing and Stationery.....		50 40
	10300	Erie City Iron Works,		
		Boiler Repairs.....		56 00
	10301	Erie Machine Shop,		
		Boiler and Engine Repairs..		81 27
	10302	The Fairbanks Company,		
		Check Valve.....		84 50
	10303	Hays Manufacturing Co.,		
		Pipe and Fittings.....		86 41
	10304	Erie Oil Works,		
		Oil.....		154 46

REPORT OF THE COMMISSIONERS OF

March—Continued.

TO PAY VOUCHERS.

		Amount.
10005	Erie Manufacturing and Supply Co., Packing .. Vasey, Clerk.....	\$ 200 00
10006	Geo. C. Gensheimer, Asst Sec'y. Salaries.....	7 44
10007	W. Meyer & Son	455 75
10008	Pay Roll Street Work Discovered by M. L. Wintley, Clerk.....	175 00
10009	Pay Roll Street Work Discovered by M. L. Wintley, Clerk.....	150 00
10010	Pay Roll Street Work Discovered by M. L. Wintley, Clerk.....	122 35
10011	Geo. C. Gensheimer, Asst Sec'y. Salaries.....	5 35
10012	Pay Roll Street Work Discovered by M. L. Wintley, Clerk.....	186 00
Total.....		\$ 244 50

April

TO PAY VOUCHERS.

Date.		Amount.
4/1	Pay R. L. Pumping Station Discovered by Geo. C. Gensheimer, Asst Sec'y....	\$ 345 00
4/11	Pay R. L. Office and Inspectors. Discovered by Geo. C. Gensheimer, Asst Sec'y....	876 00
4/12	Geo. C. Gensheimer, Asst Sec'y. Salaries.....	24 50
4/13	Pay Roll Street Work Discovered by M. L. Wintley, Clerk.....	330 00
4/14	Wm. F. Nick & Son Thermometer.....	1 75
4/15	Consumers Ice and Cold Storage Co.,	1 75
4/16	George S. Anderson. Repairing Harness.....	2 00
4/17	Erie Window Glass Co.,	2 25
4/18	Hendrick Printing and Publishing Co.,	2 75
4/19	The Erie Meter Co., Repairing Material.....	2 75
4/20	Hendrick Printing	4 75
4/21	The Engineering News Publishing Co., Subscription.....	5 00
4/22	S. S. Hartman,	5 75
4/23	Mann & Son	6 14
4/24	Erie Heating and Plumbing Co., Sewer Pipe.....	6 40

April—Continued.

TO PAY VOUCHER.

Date.	No.	Of	For	Amount.
	10328	O. C. Thayer & Son,	Cement and Clay.....	\$ 6 40
	10329	The Flickinger Roofing and Cornice Co., Limited,	Oil Cans, Wire Screens, Etc.....	6 90
	10330	Erie City Iron Works,	Door Liners and Manhole Crabs.....	8 25
	10331	Ashby & Vincent,	Blank Books.....	8 50
	10332	A. S. Pinney,	Hardware and Tools.....	8 52
	10333	The Himrod Engraving Company,	Stationery.....	11 85
	10334	National Meter Company,	Repairing Meters.....	12 50
	10335	Keystone Electric Company,	Carbon Brushes, Fuse Wire, Etc.....	15 25
	10336	Franklin Coal Co.,	Coal.....	16 50
	10337	Globe Iron Foundry Co.,	Castings.....	16 88
	10338	Edison Construction and Supply Department,	Material for Electric Light Plant.	17 41
	10339	Lyman Felheim,	Meter Boxes.	17 70
	10340	William Schade,	Engine Repairs and Tools.....	18 06
	10341	E. J. Riblet,	Shop Rent.....	20 00
	10342	James L. Firman,	Teaming.....	20 98
	10343	Union Water Meter Company,	Meters.....	22 60
	10344	John Hamberger, Agent,	Insurance Premium.....	25 00
	10345	Mutual Telephone Company.	Rental of Telephones.....	36 00
	10346	Erie Machine Shop,	Engine and Boiler Repairs.....	45 03
	10347	The Bristol Company,	Recording Gauge.....	54 00
	10348	The Atlantic Refining Company, Eclipse Station,	Oil.....	92 35
	10349	Erie Manufacturing and Supply Co.,	Grease, Packing, Waste, Etc.....	115 44
	10350	F. R. Dravo & Co.,	Test of Engine No. 5.....	304 50
	10351	Momeyer & Graf,	Coal.....	821 94
	10352	Henry R. Worthington,	Payment on Engine No. 5... ..	7,420 50
	10353	Pay Roll, Street Work,	Disbursed by M. L. Whitley, Clerk.....	435 02
21	10354	The Henesey Manufacturing Co.,	Leather Washers.....	12 74

April—Continued.**TO PAY VOUCHER.**

Date.	No.	Of	For	Amount.
	10355	Hays Manufacturing Co.,		
		Fittings.....	\$	46 07
	10356	Geo. C. Gensheimer, Ass't Sec'y,		
		Sundries.....		109 53
	10357	Pay Roll, Street Work,		
		Disbursed by M. L. Whitley, Clerk.....		458 99
	10358	Times Publishing Company,		
		Printing and Stationery.....		432 30
	10359	Clarence A. Taylor and Eva Taylor, his Wife,		
		Damages.....		395 63
28	10360	Mrs. Mary Hurbert,		
		Frozen Connection		5 75
	10361	Louis Barthelmes,		
		Frozen Connection.....		5 80
	10362	Geo. C. Gensheimer, Ass't Sec'y,		
		Sundries.....		9 27
	10363	National Carbon Company,		
		Carbons.....		81 67
	10364	C. N. Hathaway,		
		Painting.....		100 00
	10365	Pay Roll, Street Work,		
		Disbursed by M. L. Whitley, Clerk.		451 85
Total.				\$13,810 77

May.**TO PAY VOUCHER.**

Date.	No.	Of	For	Amount.
1	10366	William Hardwick,		
		Services as Commissioner, 2 Months.....	\$	150 00
	10367	T. W. Shacklett,		
		Services as Commissioner, 2 Months.....		150 00
	10368	Clark Olds,		
		Services as Commissioner, 2 Months		150 00
	10369	Pay Roll, Pumping Station,		
		Disbursed by Geo. C. Gensheimer, Ass't Sec'y...		845 00
	10370	Pay Roll, Office and Inspectors,		
		Disbursed by Geo. C. Gensheimer, Ass't Sec'y...		876 66
5	10371	Erie Steam Bending Works,		
		Lumber.....		1 25
	10372	Consumers' Ice and Cold Storage Co.,		
		Ice.....		1 40
	10373	August Jarecki,		
		Repairing Clock.		1 50
	10374	F. A. Douglass,		
		Alarm Bell		2 08
	10375	The Flickinger Roofing and Cornice Co., Ltd.,		
		Tools.....		2 82
	10376	A. S. Finney,		
		Hardware and Tools.....		5 10
	10377	Wm. F. Nick & Son,		
		Brush, Paint and Oil.....		5 78

May—Continued.**TO PAY VOUCHER.**

Date.	No.	Of	For	Amount.
	10378	Emil Streuber,	Sole Leather.....\$	6 30
	10379	Erie Gas Company,	Coke.....	7 26
	10380	Mehl & Sapper,	Hardware and Tools.....	8 66
	10381	Lyman Felheim,	Lumber and Meter Box.....	8 87
	10382	Keller & Nerz,	Stone.....	10 00
	10383	Union Water Meter Company,	Meter Repairs.....	10 00
	10384	Skinner Engine Company,	Gauges, Washers, Etc.....	10 58
	10385	Henry Beckman & Sons,	Clover Seed.....	12 50
	10386	Ashby & Vincent,	Book and Stationery.....	19 15
	10387	E. J. Riblet,	Shop Rent.....	20 00
	10388	United States Cast Iron Pipe and Foundry Co.,	Pipe.....	23 81
	10389	The Fairbanks Company,	Check Valves.....	25 97
	10390	The Atlantic Refining Company, Eclipse Station,	Oil.....	26 40
	10391	Erie Oil Works,	Oil.....	75 55
	10392	Union Oil Works,	Oil... ..	83 38
	10393	Globe Iron Foundry Co.,	Castings.....	84 96
	10394	Erie Manufacturing and Supply Co.,	Fittings, Grease, Packing, Etc.....	204 18
	10395	Momeyer & Graf,	Coal.....	899 50
	10396	O. C. Thayer & Son,	Cement.. ..	2 10
	10397	Geo. C. Gensheimer, Ass't Sec'y,	Sundries.....	20 99
	10398	Erie Machine Shop,	Tools.....	24 94
	10399	Hays Manufacturing Co.,	Fittings.....	230 63
	10400	Pay Roll, Street Work,	Disbursed by M. L. Whitley, Clerk.....	406 59
12	10401	Geo. C. Gensheimer, Ass't Sec'y,	Sundries.....	25 04
	10402	Pay Roll, Street Work,	Disbursed by M. L. Whitley, Clerk.....	366 90
19	10403	Pay Roll, Street Work,	Disbursed by M. L. Whitley, Clerk.....	441 57

May—Continued.**TO PAY VOUCHER.**

Date	No.	Of	For	Amount.
	10404	William Hardwick,		
		Services as Commissioner, in full to date...	.....\$	50 00
26	10405	Geo. C. Gensheimer, Ass't Sec'y,		
		Sundries.....		127 68
	10406	Pay Roll, Street Work,		
		Disbursed by M. L. Whitley, Clerk.....		445 04
		Total.....	\$	5,870 14

June.**TO PAY VOUCHER.**

Date	No.	Of	For	Amount.
1	10407	Pay Roll, Pumping Station,		
		Disbursed by Geo. C. Gensheimer, Ass't Sec'y...	\$	855 00
	10408	Pay Roll, Office and Inspectors,		
		Disbursed by Geo. C. Gensheimer, Ass't Sec'y...		876 66
2	10409	Geo. C. Gensheimer, Ass't Sec'y,		
		Sundries.....		10 72
	10410	Pay Roll, Street Work,		
		Disbursed by M. L. Whitley, Clerk.....		417 86
9	10411	Consumers' Ice and Cold Storage Co.,		
		Ice.....		1 40
	10412	Held, Gorenflo & Co.,		
		Advertising.....		1 50
	10413	Hollands Manufacturing Co.,		
		Tools.....		1 50
	10414	Erie Window Glass Co.,		
		Glass.....		1 75
	10415	John H. Walker,		
		Stationery		2 00
	10416	Brown & Thomas,		
		Iron Rail.....		2 40
	10417	Times Publishing Company,		
		Advertising.....		2 70
	10418	Wm. F. Nick & Son,		
		Paints.....		2 95
	10419	The Flickinger Roofing and Cornice Co., Ltd.,		
		Copper, Brass, Labor, Etc.....		3 00
	10420	O. C. Thayer & Son,		
		Cement.....		3 29
	10421	Erie Gas Company,		
		Coke.....		3 46
	10422	A. S. Pinney,		
		Hardware and Tools.....		3 95
	10423	Mehl & Sapper,		
		Hardware and Tools.....		5 11
	10424	Herald Printing and Publishing Company,		
		Advertising and Stationery.....		5 50
	10425	Erie Machine Shop,		
		Repairing Drinking Fountains... ..		5 80
	10426	New York & Penn'a. Telephone and Telegraph Co.,		
		Telephone Rental.....		6 00

June—Continued.

TO PAY VOUCHER.

Date.	No.	Of	For	Amount.
	10427	A. J. Louch,	Window Awnings.....\$	7 00
	10428	Warfel & Arbuckle,	Horse Blankets.....	7 00
	10429	J. M. Dunn,	Brick.....	7 80
	10430	Standard Brick Works,	Brick.....	7 80
	10431	Consumers' Brewing Co.,	Meter Box, Iron Top.....	9 20
	10432	Erie Company,	Electric Light Fixtures.....	9 28
	10433	Union Oil Works,	Oil.....	9 59
	10434	Franklin Coal Co.,	Coal and Wood.....	10 25
	10435	F. J. Hampel,	Repairing Electric Light Plant.....	12 30
	10436	Wm. F. Schade,	Repairing Boilers and Engines, Etc.....	16 65
	10437	Keystone Electric Company,	Arc Lamp Globes, Etc.....	17 50
	10438	E. J. Riblet,	Shop Rent.....	20 00
	10439	South Erie Iron Works,	Castings.....	20 08
	10440	C. Kessler,	Soap, Brooms, Mops, Etc.....	20 40
	10441	Lyman Felheim,	Meter Boxes and Wooden Plugs.....	23 81
	10442	Union Water Meter Company,	Repairing Meters.....	24 50
	10443	Pennsylvania Company,	Freight.....	42 70
	10444	Erie Machine Shop,	Repairing Engines and Tools.....	45 34
	10445	James L. Firman,	Teaming.....	56 86
	10446	F. A. Mizener,	Coal.....	122 00
	10447	Erie Oil Company,	Oil.....	144 30
	10448	Meehan Boiler and Construction Co.,	Painting Steel Plate Chimney No. 1.....	177 88
	10449	Globe Iron Foundry Co.,	Castings.....	193 61
	10450	Hays Manufacturing Co.,	Fittings.....	265 05
	10451	Pittsburg Meter Co.,	Water Meter Prover.....	296 06
	10452	Erie Manufacturing and Supply Co.,	Fittings, Valves, Waste, Etc.....	319 29
	10453	Henry R. Worthington,	Hot Water Meter, Cylinder for Accumulator, Etc.	350 50

June—Continued.

TO PAY VOUCHER.

Date.	No.	Of	For	Amount.
	10454		Not Issued.	
	10455	Momeyer & Graf,	Coal.....	\$ 519 10
	10456	Geo. C. Gensheimer, Ass't Sec'y,	Sundries.....	10 73
	10457	Pay Roll, Street Work,	Disbursed by M. L. Whitley, Clerk.....	475 54
16	10458	Jarecki Manufacturing Co.	Fittings.....	24 95
	10459	Geo. C. Gensheimer, Ass't Sec'y,	Sundries.....	27 73
	10460	F. P. Gill,	Pattern Work.....	37 63
	10461	Pay Roll, Street Work,	Disbursed by M. L. Whitley, Clerk.....	500 88
23	10462	Geo. C. Gensheimer, Ass't Sec'y,	Sundries.....	8 63
	10463	Chas. F. Bengel,	Painting as per Contract.	80 00
	10464	Pay Roll, Street Work,	Disbursed by M. L. Whitley, Clerk.....	525 96
30	10465	Mrs. Orilla Block,	Washing Towels, 6 Months.....	6 00
	10466	Henry Roehin,	Painting and Repairing Boats.....	20 00
	10467	R. T. Walker,	Rent of Barn, 6 Months.....	30 00
	10468	Mutual Telephone Company,	Rental of Telephones.....	36 00
	10469	T. W. Shacklett,	Services as Commissioner, 2 Months.....	150 00
	10470	Clark Olds,	Services as Commissioner, 2 Months.....	150 00
	10471	G. F. Brevillier,	Services as Commissioner, 1½ Months..	100 00
	10472	Pay Roll, Pumping Station,	Disbursed by Geo. C. Gensheimer, Ass't Sec'y...	855 00
	10473	Pay Roll, Office and Inspectors,	Disbursed by Geo. C. Gensheimer, Ass't Sec'y...	876 66
	10474	Pay Roll, Street Work,	Disbursed by M. L. Whitley, Clerk.....	561 73
Total.....				\$ 9,445 84

July.

TO PAY VOUCHERS

Date.	No.	Of	For	Amount.
7	10475	Pay Roll, Street work.		
		Disbursed by M. L. Whitley, Clerk.....	\$	528 83
	10476	Raymond Lead Co.,		
		Pig Lead.....		1,272 63
10	10477	The Constable Bros. Co.,		
		Labor and Material for Buildings, etc.....		311 03
14	10478	Ashby & Vincent,		
		Book		1 50
	10479	C. Kessler,		
		Vinegar Bbl., etc.....		1 52
	10480	Keystone Electric Company,		
		Repairing Arc Lights.....		2 00
	10481	Warner Bros.,		
		Mats.....		2 50
	10482	Enterprise Tea Co.,		
		Rolled Oats and Burlaps.....		2 80
	10483	H. F. Watson Co.,		
		W. B. Covering		3 29
	10484	Consumers' Ice Company,		
		Ice.....		3 75
	10485	J. G. Schlindwein.		
		Repairing Harness.....		3 95
	10486	Erie Chemical Co.,		
		Pig Lead.....		4 00
	10487	G. J. Gebhardt,		
		Wood		4 50
	10488	H. C. Dunn,		
		Brick.....		6 50
	10489	Herald Printing & Publishing Co.,		
		Stationery		7 00
	10490	Brown & Thomas.		
		Iron Rail.....		7 20
	10491	A. S. Pinney,		
		Hardware and Tools.....		8 01
	10492	Geo. C. Gensheimer, Ass't Sec'y,		
		Sundries... ..		9 22
	10493	The Erie Gas Company.		
		Coke.....		10 47
	10494	Wm. F. Nick & Son,		
		Paint and Oil.. ..		10 60
	10495	Mehl & Sapper.		
		Hardware and Tools.....		11 05
	10496	Lyman Felheim,		
		Lumber and Wooden Plugs.. ..		11 46
	10497	O. C. Thayer & Son,		
		Cement and Lime.....		13 31
	10498	James McCrea & Co.,		
		Steam Joint Clamps.....		13 50
	10499	Standard Brick Works,		
		Brick.....		15 00
	10500	A. P. Allen,		
		Oats.....		17 00
	10501	Lake City Machine Shop,		
		Tools and Repairs.....		17 80
	10502	The Fairbanks Company,		
		Check Valves..		18 92

July—Continued.**TO PAY VOUCHER.**

Date.	No.	Of	For	Amount.
	10503	Edison Construction & Supply Dept.,	Repairing Electric Light Plant.....\$	19 40
	10504	Erie Window Glass Co.,	Glass, Oil and Paint.....	19 63
	10505	E. J. Riblet,	Shop Rent.....	20 00
	10506	United States Cast Iron Pipe and Foundry Co.,	Pipe and Specials.....	24 15
	10507	Central Blacksmith Works,	Horseshoeing, etc.....	24 95
	10508	Titus Berst,	Flower Beds.....	40 25
	10509	James L. Firman,	Teaming.....	40 25
	10510	The Holly Manufacturing Company,	Valve Cages, Cups and Rubbers.....	43 75
	10511	W. E. Long, Collector,	Taxes in 6th Ward.....	59 75
	10512	Erie Machine Shop,	Boiler and Engine Repairs.....	122 10
	10513	Union Oil Works,	Oil.....	163 20
	10514	Erie Mfg. & Supply Co.,	Grease, Packing, Waste, etc.....	185 58
	10515	Globe Iron Foundry Co.,	Castings....	197 50
	10516	Union Water Meter Co ,	Meters and Repairs	216 60
	10517	Henry Herbst, Collector,	Taxes in 4th Ward.....	218 75
	10518	Momeyer & Graf,	Coal.....	671 30
	10519	Hays Manufacturing Co.,	Fittings, Galv. Iron Pipe, etc.....	788 67
	10520	Pay Roll, Street Work	Disbursed by M. L. Whitley, Clerk.....	589 61
21	10521	Board of Commissioners of the Sinking Fund of the City of Erie, City of Erie—Board of Commissioners of the Sinking Fund.....		10,000 00
	10522	Geo. C. Gensheimer, Ass't Sec'y,	Sundries.....	8 59
	10523	Mayer Brothers,	Repairing Cuts in Pavements.....	68 03
	10524	The Lake Shore & Michigan Southern Ry. Co.,	Freight.....	33 00
	10525	Pennsylvania Company,	Freight	73 00
	10526	Pay Roll, Street Work,	Disbursed by M. L. Whitley, Clerk.....	617 70
28	10527	Pay Roll, Street Work,	Disbursed by M. L. Whitley, Clerk.....	551 10
30	10528	Pay Roll, Pumping Station,	Disbursed by Geo. C. Gensheimer, Ass't Sec'y....	905 00
	10529	Pay Roll, Office and Inspectors,	Disbursed by Geo. C. Gensheimer, Ass't Sec'y...	876 66
Total.....				\$18,897 86

August.**TO PAY VOUCHER.**

Date.	No.	Of	For	Amount.
4	10530	Pennsylvania Rubber Co.,	Valves.....	\$ 1 99
	10531	Geo. C. Gensheimer, Ass't Sec'y,	Sundries.....	14 09
	10532	The Henesey Mfg. Co.,	Leather Washers.....	15 68
	10533	The Lake Shore & Michigan Southern Ry. Co.,	Freight.....	17 10
	10534	United States Cast Iron Pipe and Foundry Co.,	Cast Iron Pipe.....	406 63
	10535	Pay Roll, Street Work,	Disbursed by M. L. Whitley, Clerk.....	614 21
11	10536	Gus J. Miller,	Soap, Hoof Oil and Brush.....	1 30
	10537	Keystone Electric Company,	Repairing Arc Light.....	1 50
	10538	Erie Sand and Gravel Co.,	Sand.....	1 80
	10539	A. S. Pinney,	Hardware and Tools.....	2 24
	10540	Enterprise Tea Co.,	Rolled Oats.....	2 50
	10541	Hollands Manufacturing Co.,	Tools.....	2 93
	10542	Jarecki Manufacturing Co.,	Fittings.....	3 27
	10543	Lyman Felheim,	Wooden Plugs.....	3 36
	10544	Consumers' Ice and Cold Storage Co.,	Ice.....	3 40
	10545	The Bristol Company,	Charts.....	4 50
	10546	The Erie Gas Co.,	Coke.....	4 99
	10547	Central Blacksmith Works,	Horse Shoeing.....	5 00
	10548	Emil Streuber,	Sole Leather.....	7 25
	10549	Deming Bros.,	Meter Boxes.....	9 00
	10550	Mehl & Sapper,	Hardware and Tools.....	11 54
	10551	Union Oil Works,	Oil.....	11 82
	10552	Standard Brick Works,	Brick.....	12 00
	10553	Wm. Schade,	Blacksmithing.....	14 18
	10554	John Bright,	Old Rope.....	15 00
	10555	E. J. Riblet,	Shop Rent.....	20 00
	10556	H. C. Dunn,	Brick.....	26 00

August—Continued.**TO PAY VOUCHER.**

Date.	No.	Of	For	Amount.
	10557	The Himrod Engraving Company,	Stationery.....\$	28 75
	10558	James McCrea & Co.,	Steam Joint Clamps.....	33 75
	10559	Baas & Althof,	Railing.....	35 35
	10560	South Erie Iron Works,	Castings.....	39 71
	10561	O. C. Thayer & Son,	Cement and Clay.....	42 23
	10562	Ashby & Vincent,	Books and Stationery....	44 35
	10563	James L. Firman,	Teaming.....	47 79
	10564	Erie Machine Shop,	Engine Repairs and Tools.....	57 34
	10565	Edison Electric Light and Power Co.,	Fans and Wiring and Installing Same.....	60 00
	10566	Union Iron Works,	Tools.....	62 43
	10567	The J. L. Mott Iron Works,	Drinking Fountain.....	89 00
	10568	Erie Oil Company,	Oil.....	162 12
	10569	Globe Iron Foundry Co.,	Castings.....	174 65
	10570	Erie Manufacturing and Supply Co.,	Fittings, Grease, Packing, Etc.....	217 24
	10571	Hays Manufacturing Co.,	Fittings, Valves, Etc.....	321 44
	10572	Union Water Meter Company,	Meters.....	360 00
	10573	H. B. Wyeth, Sales Agent,	Burrows' Registering Accountant.....	375 00
	10574	R. D. Wood & Co.,	Fire Hydrants and Stop Valves.....	607 00
	10575	Momeyer & Graf,	Coal.....	772 54
	10576	United States Cast Iron Pipe and Foundry Co.,	Cast Iron Pipe.....	1,294 30
	10577	Geo. C. Gensheimer, Ass't Sec'y,	Sundries.....	28 12
	10578	Henry Senger,	Cut Stone.....	11 20
	10579	A. P. Allen,	Oats and Straw.....	17 92
	10580	Library Bureau,	Filing Case.....	64 25
	10581	Alcatraz Paving Company,	Repairing Cuts in Pavements.....	88 63
	10582	Pay Roll, Street Work,	Disbursed by M. L. Whitley, Clerk.....	573 76
18	10583	J. Allison Himrod,	Services on Intake No. 2..	5 00

August—Continued.**TO PAY VOUCHER.**

Date.	No.	Of	For	Amount.
	10584	S. Alfred Baur,	Flowers at Reservoir.....	\$ 7 00
	10585	Pay Roll, Street Work,	Disbursed by P. F. Weinheimer, Inspector..	573 66
25	10586	Pay Roll, Street Work,	Disbursed by P. F. Weinheimer, Inspector.....	584 31
Total.....				\$ 8,012 12

September.**TO PAY VOUCHER.**

Date.	No.	Of	For	Amount.
1	10587	The Smith Premier Typewriter Company,	Typewriter, Cabinet and Chair.....	\$ 146 25
	10588	T. W. Shacklett,	Services as Commissioner, 2 Months.....	150 00
	10589	Clark Olds,	Services as Commissioner, 2 Months.....	150 00
	10590	G. F. Brevillier,	Services as Commissioner, 2 Months.....	150 00
	10591	Pay Roll, Office and Inspectors,	Disbursed by Geo. C. Gensheimer, Ass't Sec'y...	876 66
	10592	Pay Roll, Pumping Station,	Disbursed by Geo. C. Gensheimer, Ass't Sec'y...	905 00
	10593	Pay Roll, Street Work,	Disbursed by M. L. Whitley, Clerk.....	588 29
8	10594	Consumers' Ice and Cold Storage Co.,	Ice.....	1 40
	10595	Hollands Manufacturing Co.,	Tools.....	1 48
	10596	Jos. Jehle,	Rolled Oats.....	1 50
	10597	Keller & Nerz,	Cap Stone.....	1 50
	10598	Lyman Felheim,	Wooden Plugs.....	2 94
	10599	Central Blacksmith Works,	Horse Shoeing.....	3 20
	10600	Brown & Thomas,	Iron Rail (old).....	3 30
	10601	Erie Window Glass Co.,	Ruby Glass.....	3 50
	10602	Henry Senger,	Cut Stone.....	4 25
	10603	A. S. Pinney,	Hardware and Tools.....	4 42
	10604	Deming Bros.,	Meter Box.....	4 50
	10605	Erie Company,	Coke.....	5 48
	10606	Edison Construction and Supply Dep't,	Repairs to Electric Light Plant.....	5 57
	10607	O. C. Thayer & Son,	Cement.....	9 35

September—Continued.

TO PAY VOUCHER.

Date.	No.	Of	For	Amount.
	10608	Hand & Johnson Tug Line,	Towing Buoy for Intake No. 2.....\$	10 00
	10609	Mehl & Sapper,	Hardware and Tools.....	10 28
	10610	Ashby & Vincent,	Books and Stationery.....	10 60
	10611	H. C. Dunn,	Brick.....	13 00
	10612	A. J. Louch,	Hose.....	13 50
	10613	The J. L. Mott Iron Works,	Drinking Fountain.....	16 50
	10614	Wm. F. Nick & Son,	Oil and Paint.....	18 62
	10615	E. J. Riblet,	Shop Rent.....	20 00
	10616	South Erie Iron Works,	Castings.....	20 63
	10617	Alcatraz Paving Co.,	Repairing Pavements.....	35 91
	10618	Mayer Bros.,	Repairing Pavements.....	45 11
	10619	Henry R. Worthington,	Repairs to Engine No. 3.....	52 90
	10620	Globe Iron Foundry Co.,	Castings.....	80 85
	10621	Erie Machine Shop,	Engine Repairs and Tools.....	87 57
	10622	Union Water Meter Company,	Meter.....	95 00
	10623	Union Oil Works,	Oil.....	159 81
	10624	Erie Mfg. & Supply Co.,	Grease, Packing, Waste, Tools, etc.....	265 01
	10625	Hays Manufacturing Co.,	Fittings, Curb Boxes, etc.....	291 28
	10626	Momeyer & Graf, use W. L. Scott Company,	Coal.....	918 58
	10627	J. H. Braggins,	Casing Steam Pipe.....	3 31
	10628	Geo. C. Gensheimer, Ass't Sec'y,	Sundries.....	26 46
	10629	James L. Firman,	Teaming.....	49 49
	10630	Pay Roll, Street Work,	Disbursed by M. L. Whitley, Clerk.....	496 49
15	10631	Geo. C. Gensheimer, Ass't Sec'y,	Sundries.....	13 73
	10632	Pay Roll, Street Work,	Disbursed by M. L. Whitley, Clerk.....	578 23
22	10633	Geo. C. Gensheimer, Ass't Sec'y,	Sundries.....	4 69
	10634	Pennsylvania Company,	Freight.....	64 60

September—Continued.**TO PAY VOUCHER.**

Date.	No.	Of	For	Amount.
	10635	Pay Roll, Street Work, Disbursed by M. L. Whitley, Clerk.....	\$	486 51
29	10636	Geo. C. Gensheimer, Ass't Sec'y, Sundries.....		8 95
	10637	Pennsylvania Company, Freight.....		66 15
Total.....				\$ 6,982 35

October.**TO PAY VOUCHER.**

Date.	No.	Of	For	Amount.
1	10638	Pay Roll, Street Work, Disbursed by M. L. Whitley, Clerk.....	\$	592 47
	10639	Pay Roll, Office and Inspectors, Disbursed by Geo. C. Gensheimer, Ass't Sec'y...		889 66
	10640	Pay Roll, Pumping Station, Disbursed by Geo. C. Gensheimer, Ass't Sec'y...		905 00
6	10641	Geo. C. Gensheimer, Ass't Sec'y, Sundries.....		21 17
	10642	W. A. Tompkins, Repairing Boats.....		40 00
	10643	Pay Roll, Street Work, Disbursed by M. L. Whitley, Clerk.....		547 26
13	10644	Lyman Felheim, Wooden Plugs.....		1 12
	10645	The Builders Depot, Tile.....		1 36
	10646	Harry Thompson, Dynamite Cap and Fuse.....		1 72
	10647	Consumers' Ice and Cold Storage Co., Ice.....		1 75
	10648	J. H. Braggins, Covering Steam Pipe.....		1 82
	10649	Murphy Bros., Repairing Tools and Water Cooler..		2 10
	10650	A. S. Pinney, Hardware and Tools.....		2 33
	10651	Kraft & Walther, Cement and Tile.....		2 34
	10652	C. Flickinger, Brushes and Pails.....		3 30
	10653	Deming Bros., Meter Box		4 50
	10654	Franklin Coal Co., Wood.....		4 50
	10655	New York & Penn'a. Telephone & Telegraph Co., Rental of Telephone.....		6 00
	10656	Keystone Electric Company, Carbon Holders.....		6 30

October—Continued.**TO PAY VOUCHER.**

Date.	No.	Of	For	Amount.
10657		Held Brothers,		
		Earth.....	\$	6 30
10658		James McCrea & Co.,		
		Steam Joint Clamp....		6 75
10659		J. G. Schlindwein,		
		Repairing Harness.....		6 80
10660		Central Blacksmith Works,		
		Horse Shoeing.....		8 80
10661		O. C. Thayer & Son,		
		Cement.....		9 20
10662		Erie Company,		
		Coke.....		9 25
10663		H. C. Dunn Mgr.,		
		Brick.....		14 30
10664		Herald Printing and Publishing Company,		
		Stationery and Printing.....		16 95
10665		A. P. Allen,		
		Oats and Straw.....		18 43
10666		E. J. Riblet,		
		Shop Rent.....		20 00
10667		C. Kessler,		
		Brooms, Soap, Wicks, Etc.....		20 55
10668		National Meter Company,		
		Repairing Meter.....		22 90
10669		John Bright,		
		Old Rope.....		24 00
10670		Mehl & Sapper,		
		Hardware and Tools		27 35
10671		Standard Brick Works,		
		Brick.....		27 60
10672		Erie Machine Shop,		
		Repairing Engines.....		34 34
10673		Mutual Telephone Co.,		
		Telephone Rental.....		36 00
10674		South Erie Iron Works		
		Meter Tops.....		40 43
10675		James L. Firman,		
		Teaming.....		53 49
10676		Ashby & Vincent,		
		Stationery and Printing.....		63 50
10677		The Flickinger Roofing and Cornice Co., Ltd.,		
		Repairing Roof of Engine Houses.....		67 00
10678		Erie Oil Company,		
		Oil.....		94 65
10679		Erie Manufacturing and Supply Co.,		
		Packing, Waste, Valves, Etc..		117 80
10680		Globe Iron Foundry Co.,		
		Castings		162 17
10681		Union Water Meter Company.		
		Meters.....		188 02
10682		Library Bureau.		
		Ledger and Index Cards.....		220 77
10683		Hays Manufacturing Co.,		
		Fittings.....		223 61
10684		R. D. Wood & Co.,		
		Stop Valves.....		363 00

October--Continued.**TO PAY VOUCHER.**

Date.	No.	Of	For	Amount.
	10685	Momeyer & Graf, use The W. L. Scott Company,		
		Coal	\$	755 48
	10686	Library Bureau,		
		Index Cards.....		18 25
	10687	Union Oil Works,		
		Oil.....		85 85
	10688	Pittsburg Meter Co.,		
		Repairing.....		3 28
	10689	Geo. C. Gensheimer, Ass't Sec'y,		
		Sundries.....		14 50
	10690	Pay Roll, Street Work,		
		Disbursed by M. L. Whitley, Clerk.....		595 79
20	10691	Geo. C. Gensheimer, Ass't Sec'y,		
		Sundries.....		5 07
	10692	Pay Roll, Street Work,		
		Disbursed by M. L. Whitley, Clerk		610 57
27	10693	Geo. C. Gensheimer, Ass't Sec'y,		
		Sundries.....		20 82
	10694	Pay Roll, Street Work,		
		Disbursed by M. L. Whitley, Clerk.....		586 46
Total.....				\$ 7,634 73

November.**TO PAY VOUCHER.**

Date.	No.	Of	For	Amount.
1	10695	T. W. Shacklett,		
		Services as Commissioner, 2 Months.....	\$	150 00
	10696	Clark Olds,		
		Services as Commissioner, 2 Months.....		150 00
	10697	G. F. Brevillier,		
		Services as Commissioner, 2 Months.....		150 00
	10698	Pay Roll, Office and Inspectors,		
		Disbursed by Geo. C. Gensheimer, Ass't Sec'y...		902 66
	10699	Pay Roll, Pumping Station,		
		Disbursed by Geo. C. Gensheimer, Ass't Sec'y...		905 00
3	10700	Geo. C. Gensheimer, Ass't Sec'y,		
		Sundries.....		19 97
	10701	James Vernon,		
		Stone Work.....		129 60
	10702	Pay Roll, Street Work,		
		Disbursed by M. L. Whitley, Clerk.....		573 53
10	10703	H. F. Watson Company,		
		3 Ply Paper.....		1 00
	10704	Consumers' Ice and Cold Storage Co.,		
		Ice.....		1 40
	10705	J. H. Braggins,		
		Cover for Valve.....		1 47
	10706	Lyman Felheim,		
		Wooden Plugs....		2 80
	10707	C. C. Wicks,		
		Use of Launch.....		3 00

November—Continued.

TO PAY VOUCHER.

Date.	No.	Of	For	Amount
10708		Wm. F. Nick & Son,		
		Oil, Paint, Brush, Etc.	\$	5 54
10709		C. Flickinger,		
		Lanterns, Burners, Etc.		3 55
10710		Franklin Coal Co.,		
		Wood		4 50
10711		Jarecki Manufacturing Co.,		
		Fittings, Repairs to Hydrants.....		4 88
10712		C. Kessler,		
		Soap.....		5 00
10713		Deming Bros.,		
		Meter Boxes.....		6 45
10714		H. C. Dunn, Mgr.,		
		Brick.....		6 50
10715		Union Oil Works,		
		Oil.....		7 83
10716		Central Blacksmith Works,		
		Horse Shoeing.....		8 00
10717		Mehl & Sapper,		
		Hardware and Tools.....		8 68
10718		Thompson Meter Co.,		
		Repairing Meter....		9 02
10719		Erie Company,		
		Coke		9 15
10720		Carnegie Steel Company.		
		Structural Iron.....		9 87
10721		Edison Construction and Supply Department,		
		Repairs for Electric Light Plant.....		9 90
10722		Wm. E. Louch,		
		Hose and Canvas.....		11 00
10723		A. S. Pinney,		
		Hardware and Tools.....		11 75
10724		Standard Brick Works,		
		Brick.....		15 00
10725		O. C. Thayer & Son,		
		Cement and Tile.....		16 24
10726		A. P. Allen.		
		Oats and Hay.....		16 95
10727		Lake City Machine Shop,		
		Tools.		20 00
10728		Baas & Althof,		
		Wire Cloth..		20 18
10729		Hays Manufacturing Co.,		
		Fittings and Pipe.....		20 75
10730		Keystone Electric Company,		
		Repairs to Electric Light Plant and Engine.....		29 00
10731		The Conard & Jones Company,		
		Plants		36 75
10732		James L. Firman,		
		Teaming.....		47 50
10733		Union Iron Works,		
		Tools.....		51 67
10734		Union Water Meter Company,		
		Repairing Meters.....		58 00

November—Continued.

TO PAY VOUCHER.

Date.	No.	Of	For	Amount.
	10735	Jones & Laughlins, Ltd.,		
		Tools.....	\$	70 17
	10736	Stearns Manufacturing Co.,		
		Grinding Plunger.....		75 60
	10737	Erie Oil Company,		
		Oil.		78 16
	10738	National Carbon Co.,		
		Carbons.....		81 67
	10739	Erie Machine Shop,		
		Engine Repairs and Tools.....		96 29
	10740	Globe Iron Foundry Co.,		
		Castings.....		108 35
	10741	Erie Mfg. and Supply Co.,		
		Gaskets, Grease, Waste, Packing, Etc.....		121 55
	10742	The Constable Bros. Co.,		
		Repairs to Buildings, Etc.....		181 08
	10743	United States Cast Iron Pipe and Foundry Company,		
		Pipe and Specials.....		222 47
	10744	Library Bureau,		
		Cards, Desk and Truck.....		250 95
	10745	Momeyer & Graf, use The W. L. Scott Company,		
		Coal..		442 49
	10746	Not Issued.		
	10747	E. J. Riblet,		
		Shop Rent.....		20 00
	10748	Erie City Iron Works,		
		Repairs for Boilers.....		18 50
	10749	Henry R. Worthington,		
		Leather Faced Valves.....		52 65
	10750	Geo. C. Gensheimer, Ass't Sec'y,		
		Sundries.....		9 21
	10751	Pay Roll, Street Work,		
		Disbursed by M. L. Whitley, Clerk.....		549 21
	10752	Board of Commissioners of the Sinking Fund of the		
		City of Erie,		
		City of Erie, Board of Commissioners of the		
		Sinking Fund.....		5,000 00
	10753	Paul Schendler,		
		Cutting Stone.....		1 50
17	10754	Geo. C. Gensheimer, Ass't Sec'y,		
		Sundries.....		24 84
	10755	Pay Roll, Street Work,		
		Disbursed by M. L. Whitley, Clerk.....		519 11
24	10756	Geo. C. Gensheimer, Ass't Sec'y,		
		Sundries.....		21 41
	10757	Erie Painting and Decorating Company, John Kra-		
		mer, Manager,		
		Painting Reservoir House.....		57 00
	10758	Pay Roll, Street Work,		
		Disbursed by M. L. Whitley, Clerk.....		499 61
	10759	Michael McMahon,		
		Old Rope.....		30 90
Total.....				\$11,974 81

December.

TO PAY VOUCHER.

Date.	No.	Of	For	Amount.
1	10760	Geo. C. Gensheimer, Ass't Sec'y,		
		Sundries.....	\$	12 13
	10761	Pay Roll, Street Work,		
		Disbursed by M. L. Whitley, Clerk.....		398 72
	10762	Pay Roll, Office and Inspectors,		
		Disbursed by Geo. C. Gensheimer, Ass't Sec'y...		902 66
	10763	Pay Roll, Pumping Station,		
		Disbursed by Geo. C. Gensheimer, Ass't Sec'y...		905 00
8	10764	Pay Roll, Street Work,		
		Disbursed by M. L. Whitley, Clerk.....		481 00
15	10765	Geo. C. Gensheimer, Ass't Sec'y,		
		Sundries.....		4 61
	10766	Pay Roll, Street Work,		
		Disbursed by M. L. Whitley, Clerk.....		377 80
19	10767	Mrs. Orilla Block,		
		Washing Towels.....		6 00
	10768	Isadore Sobel, Postmaster,		
		Postage Stamps.....		100 00
	10769	T. W. Shacklett,		
		Services as Commissioner, 2 Months.....		150 00
	10770	Clark Olds,		
		Services as Commissioner, 2 Months.....		150 00
	10771	G. F. Brevillier,		
		Services as Commissioner, 2 Months.....		150 00
	10772	Pay Roll, Office and Inspectors,		
		Disbursed by Geo. C. Gensheimer, Ass't Sec'y...		902 74
	10773	Pay Roll, Pumping Station,		
		Disbursed by Geo. C. Gensheimer, Ass't Sec'y...		905 00
22	10774	Chas. Schuhart,		
		Water Rent, Returned.....		8 20
	10775	Pay Roll, Street Work,		
		Disbursed by M. L. Whitley, Clerk.....		208 07
29	10776	Geo. C. Gensheimer, Ass't Sec'y,		
		Sundries.....		4 25
	10777	Pay Roll, Street Work,		
		Disbursed by M. L. Whitley, Clerk.....		197 06
	10778	Board of Commissioners of the Sinking Fund of the		
		City of Erie,		
		City of Erie—Board of Commissioners of the		
		Sinking Fund.....		8,000 00
Total.....				\$ 13,863 24

RECAPITULATION, 1900.

Number Vouchers Issued.	MONTH.	AMOUNTS.
50	January.....	\$ 11,125 64
46	February.....	14,729 09
35	March.....	2,414 52
53	April.....	13,810 77
41	May.....	5,870 14
68	June.....	9,445 84
55	July.....	18,897 86
57	August.....	8,012 12
51	September.....	6,982 35
57	October.....	7,634 73
65	November....	11,974 81
19	December.....	13,863 24
597	Total.....	\$ 124,761 11

DISBURSEMENTS.

DEPARTMENT.	ACCOUNT.	FOR THE YEAR 1900.			From Beginning of Works to December 31, 1900.
		Labor.	Material.	Total.	
Construction.	Advertising, Books, S. & P.	a \$ 1 13	\$ 40 92	\$ 42 05	691 18
	Boiler No. 1.....	g 27	9 74	10 01	2,335 23
	Boiler No. 2	g 27	9 75	10 02	2,335 38
	Boiler No. 3.....	g 27	9 74	10 01	2,335 28
	Boiler No. 4.....	g 27	9 75	10 02	2,335 41
	Boiler No. 5	g 27	9 74	10 01	2,312 83
	Boiler No. 6.....	g 27	9 75	10 02	2,312 95
	Boiler No. 7.....	g 27	9 74	10 01	2,313 26
	Boiler No. 8.....	g 27	9 75	10 02	2,324 23
	Boiler House.....	g.....	.....	.....	15,826 24
	Buildings and Grounds.	73 22	8 38	81 60	95,192 66
	Civil Engineering.....	.....	.....	.....	8,554 80
	Connections.....	2,387 25	1,605 88	3,993 13	127,192 82
	Drinking Fountains.....	30 65	132 94	163 59	1,740 67
	Electric Light Plant.....	a.....	.....	.....	5,613 64
	Engines and Boilers to December 31, 1891.....	.....	.....	.....	96,715 79
	Engine No. 4.....	b.....	.....	.....	48,441 43
	Engine No. 5.....	h 733 34	15,196 15	15,929 49	33,568 49
	Engine House No. 3.....	b.....	.....	.....	21,413 19
	Engine Room Furniture and Fixtures.....	39	14 25	14 64	1,679 55
	Expense.....	a 3 85	76	4 61	403 28
	Fire Hydrants.....	237 66	1,162 97	1,400 63	29,960 14
	Fuel.....	a 56	20 36	20 92	284 94
	Gas Well.....	.....	.....	.....	8,148 59
	High Service System.....	h 144 46	325 18	469 64	48,768 09
	H. S. S. Stand Pipe No. 2, Iron Work.....	i.....	.....	.....	47 02

WATER WORKS, IN THE CITY OF ERIE.

Construction.	H. S. S. Stand Pipe No. 2, Stone Work.....	i.....	58 08	.....	187 80	.....	40 22
	Horse, Wagon and Cartage.....					245 88	5,451 30
	Intake Pipe No. 1.....	b.....					49,474 39
	Intake Pipe No. 2.....						140,971 03
	Interest and Discount.....						99,420 95
	Light, Oil, Lamps, Wicks, Etc.....	a	58		20 63	21 21	285 57
	Lowering Mains.....		2,129 31			2,129 31	4,295 22
	Mains and Branches.....		8,052 29		10,817 69	18,869 98	603,928 09
	Main 30-inch.....	...					75,956 60
	Meters.....		320 11		2,138 36	2,458 47	23,322 19
	Office Furniture and Fixtures.....	a	22 47		794 84	817 31	2,450 73
	Oil and Tallow.....	b	56		20 23	20 79	52 25
	Park Fountains.....						3,244 68
	Railroad Switch and Scales.....						2,918 92
	Reservoir.....						123,150 83
	Shop Rent.....	a	2 80		101 22	104 02	1,141 11
	Steel Plate Chimney No. 1.....	g.....					4,177 53
	Stop Valves.....		394 51		1,970 69	2,365 20	40,127 69
	Superintendent's Stores.....						217 05
	Telephone and Telegraph.....	a	03		1 15	1 18	24 04
	Tools and Repairs.....		384 05		8 75	392 80	6,288 02
	Tools—Coal Elevator and Conveyor.....	j	190 30		280 68	470 98	470 98
	Tools—Meter Prover.....	j	83 66		361 66	445 32	445 32
	Waste and Packing.....	g.....					5 20
Maintenance.	Water Lots.....	e	3 66		132 34	136 00	15,987 29
	Advertising, Books, S & P.....	a	10		3 71	3 81	518 19
	Boilers to March 5, 1898.....						24,501 08
	Boiler No. 1.....	h	71 78		124 31	196 09	412 09
	Boiler No. 2.....	h	73 43		131 93	205 36	440 38
	Boiler No. 3.....	h	73 73		124 83	198 56	418 31
	Boiler No. 4.....	h	74 55		129 49	204 04	424 26
	Boiler No. 5.....	h	51 36		113 19	164 55	369 24

a Accounts opened in 1891. b Accounts opened in 1892. c Accounts opened in 1893. d Accounts opened in 1894.

e Accounts opened in 1895. f Accounts opened in 1896. g Accounts opened in 1897. h Accounts opened in 1898. i Accounts opened in 1899.

j Accounts opened in 1900.

DISBURSEMENTS.—Continued.

DEPARTMENT.	ACCOUNT.	FOR THE YEAR 1900.			From Beginning of Works to December 31, 1900.
		Labor.	Material.	Total.	
Maintenance.	Boiler No. 6.....	\$ 55 98	114 26	170 24	393 42
	Boiler No. 7.....	55 58	109 16	164 74	350 58
	Boiler No. 8.....	72 18	106 92	179 10	367 68
	Boiler House.....	11 90	47 24	59 14	463 57
	Buildings and Grounds.....	1,308 46	364 54	1,673 00	11,566 04
	Connections.....	2,350 67	1,406 37	3,757 04	17,889 97
	Drinking.....	17 30	10 64	27 94	253 30
	Electric.....	7 67	8 49	16 16	3,547 93
	Engines.....	22 35	166 43	188 78	1,240 33
	Engine No. 1.....				13,402 04
	Engine No. 2.....				144 73
	Engine No. 3.....				470 24
	Engine No. 4.....	116 89	704 38	821 27	2,005 42
	Engine No. 5.....	209 20	1,044 31	1,253 51	4,784 68
	Engine House No. 1.....	119 17	426 44	545 61	707 32
	Engine House No. 2.....	7 60	117 95	125 55	1,810 09
	Engine House No. 3.....	42 46	172 21	214 67	8,029 33
	Engine Room Furniture and Fixtures.....	114 39	91 19	205 58	1,860 63
	Expense.....	1 59	57 60	59 19	432 38
	Fire Hydrants.....	3 84	76	4 60	368 52
	Fuel.....	385 25	38 25	423 50	3,481 29
	High Service System.....	56	20 37	20 93	239 71
	Horse, Wagon and Cartage.....	1 47	52 97	54 44	91 93
	Intake Pipe No. 1.....	57 90	187 85	245 75	5,526 54
	Intake Pipe No. 2.....	51	18 35	18 86	165 26
		18 85	1 44	20 29	31 13

Maintenance.

Light, Oil, Lamps, Wicks, Etc.....	<i>a</i>	52	18 78	19 30	180 09
Mains and Branches.....		1,301 77	331 89	1,633 66	24,965 14
Main 30 inch.....	<i>a</i>				910 49
Meters.....		167 37	309 03	476 40	6,417 76
Office Furniture and Fixtures.....	<i>a</i>	9 13	209 94	219 07	823 68
Oil and Tallow.....	<i>b</i>	13	4 86	4 99	26 27
Railroad Switch and Scales.....	<i>a</i>	4 60		4 60	1,186 34
Reservoir.....		244 03	100 81	344 84	35,994 71
Shop Rent.....	<i>a</i>	2 80	101 22	104 02	1,140 87
Stand Pipe.....	<i>c</i>	9 18	5 67	14 85	4,252 82
Steel Plate Chimney No. 1.....	<i>h</i>	21 67	180 30	201 97	203 32
Stop Valves.....		223 66	85 31	308 97	6,313 22
Superintendent's Stores.....					396 52
Telephone and Telegraph.....	<i>j</i>	01	52	53	53
Tools and Repairs.....		423 72	691 63	1,115 35	9,116 60
Waste and Packing.....	<i>b</i>	28	10 24	10 52	61 83
Advertising, Books, S. & P.....	<i>a</i>	77	27 68	28 45	1,657 91
Buildings and Grounds.....	<i>b</i>	1,192 09		1,192 09	10,931 69
Drinking Fountains.....	<i>g</i>	123 32		123 32	421 23
Electric Light.....	<i>h</i>	4 67	168 97	173 64	335 19
Electric Light Plant.....	<i>b</i>				34 84
Engineers and Firemen.....		8 904 01		8,904 01	153,871 20
Engineers' Stores.....					2,348 57
Expense.....	<i>a</i>	34	12 50	12 84	1,139 06
Fire Hydrants.....	<i>b</i>	400 96		400 96	1,828 20
Flushing Sewers.....	<i>g</i>	4 41		4 41	41 58
Fuel.....		198 81	7,186 22	7,385 03	181,154 83
Horse, Wagon and Cartage.....	<i>d</i>				54 81
Inspectors.....	<i>c</i>	2,586 86		2,586 86	19,412 45
Insurance.....		70	25 30	26 00	1,605 77
Light, Oil, Lamps, Wicks, Etc.....	<i>a</i>	90	32 75	33 65	542 62
Machinist.....	<i>j</i>	1,109 88		1,109 88	1,109 88

a Accounts opened in 1891. *b* Accounts opened in 1892. *c* Accounts opened in 1893. *d* Accounts opened in 1894.

e Accounts opened in 1895. *f* Accounts opened in 1896. *g* Accounts opened in 1897. *h* Accounts opened in 1898. *i* Accounts opened in 1899.

j Accounts opened in 1900.

Operating.

DISBURSEMENTS—Continued.

DEPARTMENT.	ACCOUNT.	FOR THE YEAR 1900.			From Beginning of Works to December 31, 1900.
		Labor.	Material.	Total.	
Operating.	Meters.....	b \$ 339	\$ 339 13	4,233 91	
	Oil and Tallow.....	48	1,801 58	18,413 59	
	Rent of Office.....	b	25 10	628 19	
	Reservoir.....	b 493	493 28	4,277 70	
	Stop Valves.....	c 132	132 01	564 63	
	Taxes—U. S., State, County and School.....	7	289 69	2 991 17	
	Telephone and Telegraph.....	a 3	127 53	1 780 31	
	Tools and Repairs.....	a	.....	946 02	
	Turning On and Off Water.....	g 173	173 77	1,093 87	
	Waste and Packing.....	21	776 82	8,844 99	
	Water Rent Returned.....	18	21 93	1,126 62	
	Advertising, Books, S. & P.....	.....	676 14	11,608 09	
Accounting	Expense.....	.....	39 86	14,903 51	
	Postage.....	12	443 25	7,495 27	
	Salaries.....	7,636	.....	205,934 24	
	City of Erie, Board of Com. of the Sinking Fund.....	.....	23 000 00	168,500 00	
Sundries.	Court Costs.....	.....	.....	19 23	
	Counsel Fees.....	.....	.....	478 40	
Legal.	Damages.....	.....	395 63	4,276 86	
	Expense.....	.....	.....	395 63	
Total.....		\$ 46,409 56	\$ 78,351 55	\$ 124,761 11	\$2,800,583 14

a Accounts opened in 1891. b Accounts opened in 1892. c Accounts opened in 1893. d Accounts opened in 1894.

e Accounts opened in 1895. f Accounts opened in 1897. g Accounts opened in 1898. h Accounts opened in 1899.

i Accounts opened in 1900.

RECAPITULATION.

DEPARTMENT.	FOR THE YEAR 1900.				From Beginning of Works to Dec. 31, 1900.
	Pro-Rata.	Labor.	Material.	Total.	
Construction.....	.4062072+	\$ 15,257 08	\$ 35 421 79	\$ 50,678 87	\$ 1,766,694 29
Maintenance.....	.1256911+	7,735 59	7,945 78	15,681 37	198,697 77
Operating.....	.2099020+	15,748 51	10,439 10	26,187 61	421,390 83
Accounting.....	.0706761+	7,668 38	1,149 25	8,817 63	239,941 11
Sundries.....	.1843523+	.....	23 000 00	23,000 00	168,519 23
Legal.....	.0031711+	.....	395 63	395 63	5,339 91
Totals.....	.9999998+	\$ 46,409 56	\$ 78,351 55	\$ 124,761 11	\$ 2,800,583 14

Amount of Coal Consumed in Pumping, Gallons of Water Pumped, Average Height Pumped, Cost per Million Gallons, Etc., from First Year Works were operated to December 31, 1900.

YEAR.	Tons Coal Consumed.	Cost Coal from Jan. 1 to Dec. 31.	Grades of Bituminous Coal.	Gallons of Water Pumped.	Increase or Decrease.	Number of places supplied.	No. of Fire Hydrants.	Average height of Water in Reservoir above surface of Bay.	Cost Coal per million gallons raised to Reservoir.	Gallons raised to Reservoir by one pound of Coal.
1868.....	591 1	\$ 309 61	Lump.							
1869.....	544 4	4,818 48	"							
1870.....	1,064 5	5,159 10	"	246,648,960		1,218	97	232 0	\$18 76	98 5
1871.....	1,422 7	7,117 00	"	279,368,495	32,719,535 i	1,727	99	232 0	16 52	150 9
1872.....	1,308 5	6,528 50	"	395,076,000	115,707,505 i	2,140	103	232 0	21 90	114 8
1873.....	1,672 5	8,412 65	"	384,062,415	11,013,585 d	2,475	107	232 0	17 38	126 4
1874.....	1,759 0	7,709 54	"	444,817,395	60,754,980 i	2,663	107	232 0	16 30	145 5
1875.....	1,836 4	8,657 61	"	531,005,475	86,188,080 i	2,700	110	232 0	13 30	159 3
1876.....	1,105 1	8,925 22	"	670,726,650	139,721,175 i	2,763	112	232 0	12 75	135 7
1877.....	2,456 6	8,509 33	"	660,981,810	9,744,840 d	2,854	114	232 0	11 64	136 4
1878.....	2,463 3	7,945 37	"	682,392,315	21,410,505 i	2,915	115	232 0	9 19	126 0
1879.....	2,628 1	7,428 92	"	807,800,400	125,408,085 i	3,011	121	232 0	8 99	142 2
1880.....	3,076 1	6,978 41	Slack.	775,805,250	31,995,150 d	3,568	126	232 0	6 45	139 7
1881.....	3,430 3	6,517 58	"	975,640,934	219,835,684 i	4,110	161	232 0	4 66	170 0
1882.....	2,968 2	5,355 93	"	829,759,260	145,881,674 d	4,687	171	234 0	4 99	152 4
1883.....	2,398 2	3,908 59	"	815 939,685	13,819 575 d	5,077	197	234 7	4 40	159 7
1884.....	3,010 8	4,502 61	"	917,781,350	101 841,665 i	5,395	248	234 3	3 86	216 0
1885.....	3,243 8	4,575 79	"	1,036,496,665	118,715,315 i	5,658	270	232 9	2 95	192 1
1886.....	3,369 0	4,318 64	"	1,117,389,075	80,892,410 i	6,140	280	233 3	1 80	301 5
1887.....	2,820 4	3,589 31	"	1,218,213,688	100,824,613 i	6,368	318	234 1	1 81	322 4
1888.....	2,392 3	2,545 46	"	1,341,708,002	123,494,314 i	6,600	333	234 6	2 18	291 42
1889.....	2,446 0	2,661 12	"	1,475,358,220	133,650,218 i	7,086	346	235 2	2 35	279 43
1890.....	2,583 6	3,052 89	"	1,659,625,551	184,267,331 i	7,728	372	236 9	2 66	248 6
1891.....	3,120 7	3,941 53	"	1,807,038,580	147,413,029 i	8,255	393	237 3	2 43	306 8
1892.....	3,658 0	4,807 11	"	2,047,993,505	240 954,925 i	8,998	415	237 4	2 21	278 62
1893.....	4,693 5	6,218 95	"	2,333,638,610	285,645,105 i	9,687	444	236 5	1 796	328 17
1894.....	2,960 0	4,423 59	"	1,816,596,518	517,042,092 d	10,680	479	236 6	2 034	331 75
1895.....	3,541 5	4,377 16	"	1,975,396,305	158,797,787 i	.....	489	237 2	1 68	363 98
1896.....	3,056 0	3,603 28	"	2,005,757,728	30,361,423 i	10,846	514	237 6	* 1 701	356 408
1897.....	3,338 2	4,507 52	Miscel's.	2,215,416,770	209,659,042 i	11,385	523	235 9	2 318	315 887
1898.....	3,119 0	3 815 68	Slack.	2,270,520,528	55,103,758 i	11,739	543	235 6		
1899.....	3,819 1	4,633 06	"	2,722,322,604	451,802,076 i	11,932	565	235 48		
1900.....	5,285 9	7,754 34	"	3,124,440,644	402,118,040 i	12,451	595	235 46		

* HIGH SERVICE SYSTEM comprises all the territory south of Nineteenth street. In this district the average lift in feet for 1900 was 291.22. See Pumping Statistics.



NEW BOILER HOUSE, AND SELF-SUSTAINING STEEL PLATE
CHIMNEY.

BALANCE SHEET—INDIVIDUAL LEDGERS.

1900. ASSESSED ACCOUNTS. 1900.

Ward.	Balance from Dec 31, 1899.	Assessments.	Additions.	Penalties.	Balance to Jan. 1, 1901.	Total.	Balance from Dec. 31, 1899.	Deductions.	Cash.	Balance to Jan. 1, 1901.
1	\$ 80 93	\$ 14,062 46	\$ 931 01	\$ 77 31	\$ 79 87	\$ 15,231 58	\$ 44 51	\$ 1,581 26	\$ 13,549 52	\$ 56 29
2	58 17	20,845 76	1,000 60	79 45	28 23	22,012 21	76 18	781 39	21,092 48	62 16
3	57 47	23,850 40	989 51	75 77	33 04	25,006 19	61 47	1,187 96	23,678 94	77 82
4	61 61	19,923 42	766 47	77 87	73 34	20,902 71	59 84	1,889 14	18,894 56	59 17
5	50 04	9,550 34	574 00	44 57	24 69	10,243 64	36 96	516 12	9,620 17	70 39
6	47 19	11,228 30	552 22	48 94	14 01	11,890 66	31 71	492 43	11,331 25	35 27
7	43 62	927 23	68 39	7 18	1 55	1,047 97	78	162 67	881 05	3 47
Total.....	\$ 399 03	\$100 387 91	\$4,882 20	\$ 411 09	\$ 254 73	\$106,334 96	\$ 311 45	\$ 6,610 97	\$ 99,047 97	\$ 364 57

METER ACCOUNTS.

1	\$ 259 42	\$ 2,737 67	\$ 3 65	\$ 6 98	.....	\$ 3,007 72	\$ 17 92	\$ 223 31	\$ 2,104 98	\$ 661 51
2	1,577 04	11,761 98	51 20	74 62	1 20	13,466 04	.....	12 20	10,519 10	2,934 74
3	826 30	5,597 76	34 12	43 53	1 34	6,503 05	3 40	43 88	4,920 95	1,534 82
4	160 78	1,472 17	37	6 70	.....	1,640 02	24 49	25 50	1,186 47	403 56
5	317 01	2,782 81	21 34	14 42	.....	3,135 58	103 64	.....	2,384 81	647 13
6	137 56	876 36	3 01	3 83	.....	1,020 76	101 55	105 64	648 91	164 66
7	70 62	745 63	36 76	4 44	.....	857 45	11 29	13 50	646 09	186 57
Total.....	\$3,348 73	\$ 25,974 38	\$ 150 45	\$ 154 52	\$ 2 54	\$ 29,630 62	\$ 262 29	\$ 424 03	\$ 22,411 31	\$6,532 99

SPECIAL PERMITS.

1	.....	\$ 13 00	.....	.....	.....	\$ 13 00	.....	.....	\$ 13 00	.....
2	.....	13 29	.....	.....	.....	13 29	.....	.....	13 29	.....
3	.....	26 57	.....	.....	.....	26 57	.....	.....	26 57	.....
4	.....	21 45	.....	.....	.....	21 45	.....	.....	21 45	.....
5	.....	28 22	.....	.....	.....	28 22	.....	.....	28 22	.....
6	.....	7 73	.....	.....	.....	7 73	.....	.....	7 73	.....
7	.....	10 42	.....	.....	.....	10 42	.....	.....	10 42	.....
Total.....	.....	\$ 120 68	.....	.....	.....	\$ 120 68	.....	.....	\$ 120 68	.....

1900. *Statement of Account with the City of Erie, Penna.* 1900.

CITY OF ERIE, PENNA.—Dr.				
CASH—Paid Board of Commissioners of the Sinking Fund of the City of Erie.....				\$ 23,000 00
INTEREST—On balances in Second National Bank, from October 1, 1899, to April 1, 1900.....	\$	80 22		
Interest on same to December 31, 1900.....		2 42	\$	82 64
From April 1, 1900, to October 1, 1900.....		55 21		
Interest on same to December 31, 1900.....		56		138 41
On payments to Board of Commissioners of the Sinking Fund of the City of Erie.....				
July 21, 1900, to December 31, 1900, on.....	\$	10,000 00		178 63
November 10, 1900, to December 31, 1900, on		5,000 00		27 95
December 29, 1900, to December 31, 1900, on		8,000 00		1 75
WATER—City Hall.....			208 33	\$ 346 74
Engine Houses.....			291 86	
Fire Hydrants.....			232 13	
Flushing Sewers.....			32,725 00	
Settling filling in Sewer Trench.....			212 00	
Fountains—Drinking.....			159 41	
Fountains—Park.....			1 251 05	1,410 46
Parks—Central—East.....		50 00		
Parks—Central—West.....		50 00		
Parks—Lakeside—East.....		17 90		
Parks—Lakeside—West.....		72 00	189 90	
Sprinkling State St., bet. Front and Dock...			140 80	
Sprinkling Streets by Superintendent of Streets.....			6 98	
Balance.....			147 78	35,209 13
				58,555 87
				583,915 94
				642,471 81
CREDITS.				
BALANCE—December 31, 1899.....				616,607 51
INTEREST—On same to December 31, 1900.....				24,664 30
RENT—Of Offices one year.....				1,200 00
				642,471 81
Balance due the City of Erie, Penna., December 31, 1900.....				\$ 583,915 94

RESOURCES:—PLANT NORTH OF FRONT STREET—

Buildings and Grounds including Piers to Intake No. 1.....	\$ 114,432 24
Boiler House from January 1, 1896.....	16,078 14
Engine House No. 3 from January 1, 1892.....	21,591 35 \$ 152,101 73
Boilers from January 1, 1896.....	18,881 54
Engines and Boilers to December 31, 1891.....	107,309 35
Engine No. 4, from January 1, 1892.....	49,147 09
Engine No. 5, from January 1, 1898.....	34,031 72 \$ 209,369 70
Coal Elevator and Conveyor from January 1, 1900.....	479 67
Electric Light Plant.....	5,711 28
Engine Room, Furniture and Fixtures	1,833 93
Meter Prover from January 1, 1900.....	453 20
Intake Pipes—No. 1.....	55,568 44
—No. 2, from January 1, 1892.....	143,826 35 \$ 199,394 79
Railroad Switch and Scales.....	3,262 09
Steel Plate Chimney No. 1, from January 1, 1896.....	4,245 44
Water Lots from January 1, 1895.....	16,151 00 \$ 593,002 83

PLANT SOUTH OF FRONT STREET—

Connections	\$135,936 82
Drinking Fountains from January 1, 1894	1,763 90
Fire Hydrants.....	31,543 95
High Service System from January 1, 1898.....	49,474 26
Mains and Branches.....	
Main 30-inch.....	\$653,558 55
Meters.....	83,289 35 \$ 736,847 90
Stop Valves.....	24,299 13
Office Furniture and Fixtures... ..	42,820 16 \$1,022,686 12
Reservoir.....	2,491 98
	137,629 35 1,162,807 45
	<u>\$1,755,810 28</u>

PERSONAL—Accounts—Assessed.....

Accounts--Meter..... \$ 364 57

Accounts--Plumbing..... \$ 6,532 99

73 64 \$ 6,897 56

380 14 6,971 20

7351 34 \$1,763,161 62

\$ 583,915 94

\$ 254 73

2 54 257 27 \$ 584,173 21

\$1,178,988 41 \$1,763,161 62

CASH - In Hands of Treasurer, City of Erie.....

LIABILITIES:—ACCOUNTS—City of Erie, Penn'a.....

Credits on Assessed.....

Credits on Meter... ..

Balance.....

WATER WORKS IN THE CITY OF ERIE

51

ountains, Drinking.. ..	2	30 00	2	30 00	1	15 00	1	18 75	11	168 75
ountain, Cuspidors.....	.....	.....	3	9 00	7	21 00	.....	.....	11	33 00
eight Houses.....	.....	.....	1	15 00	.....	.....	.....	.....	1	15 00
lass Washers.....	.....	.....	.....	.....	1	18 00	.....	.....	2	24 00
reen Houses.....	.....	.....	.....	.....	.....	.....	.....	.....	23	36 74
and Basins.....	394	329 53	497	439 16	1018	877 02	799	663 53	3009	2581 60
eating Boilers, Horse Power.	298	56 32	370	65 26	529	108 85	523	130 75	2085	436 25
orses.....	145	204 00	280	362 67	392	542 00	290	361 00	1582	2119 17
aundries.....	1	5 00	3	15 00	3	15 00	2	10 00	10	50 00
ibraries.....	1	10 00	.....	.....	.....	.....	.....	.....	1	10 00
odging Rooms.....	160	160 00	265	254 50	270	269 34	193	193 00	1012	965 75
eat Markets.....	10	36 00	18	104 00	15	83 00	14	60 00	75	382 00
ilk Depots	1	5 00	.....	.....	.....	.....	2	10 00	3	15 00
ices	82	231 87	84	389 50	82	271 00	64	258 00	320	1176 37
pera Houses.....	.....	.....	.....	.....	.....	.....	1	10 00	1	10 00
otograph Rooms.....	.....	.....	3	15 00	6	30 00	1	5 00	12	60 00
rinting Offices	3	35 00	2	10 00	5	40 00	2	10 00	12	95 00
ublic Halls.....	7	35 00	10	50 00	12	65 00	7	35 00	45	227 92
aloons	12	60 00	39	195 00	25	125 00	19	95 00	116	581 25
chool Scholars.....	908	79 80	1752	108 52	2090	185 61	824	80 20	7857	240 88
laughter Houses.....	.....	.....	1	8 00	.....	.....	.....	.....	7	44 00
eaner U. S. Michigan.....	.....	.....	.....	.....	.....	.....	.....	.....	1	10 00
tores.....	54	228 00	155	573 00	185	809 00	80	313 00	558	2208 00
Adjoining Lot.....	28	82 94	19	59 73	41	127 35	34	108 00	145	453 39
Curb.....	75	298 89	55	176 18	112	361 73	169	607 89	466	1631 77
Hydrant	35	138 35	55	156 21	54	204 52	77	288 97	300	1111 26
In House.....	67	221 95	125	412 22	57	186 30	59	191 70	463	1526 78
Lawn.....	48	149 29	74	220 65	120	360 23	98	325 43	526	1548 02
St. Cock.....	446	1237 97	516	1461 93	851	2234 49	643	1718 73	3477	9446 14
etel Sprinklers.....	600	2120 39	844	2486 92	1225	3474 62	1080	3240 72	5383	15717 36
unais.....	41	145 91	72	241 17	83	273 16	56	200 34	293	993 08
ash Pans	100	137 67	47	66 33	273	379 66	287	398 00	765	1052 66
ash Pans, Revolving	2	10 00	1	5 00	2	10 00	3	15 00	9	45 00
ash Pans.....	102	147 67	45	71 33	275	389 66	290	413 00	774	1097 66

ASSESSMENT FOR 1901.—Continued.

ITEMS ASSESSED.	WARDS.												TOTALS.			
	FIRST.		SECOND.		THIRD.		FOURTH.		FIFTH.		SIXTH.				SEVENTH.	
	No.	Amount.	No.	Amount.	No.	Amount.	No.	Amount.	No.	Amount.	No.	Amount.			No.	Amount.
Water Closets, Closing.....	821	2402 84	1201	3663 00	1879	5443 16	1273	3514 00	360	1044 00	496	1451 50	12	45 00	6042	17563 50
Water Closets, Non-Closing...	23	78 00	31	72 00	23	78 34	12	67 50	1	6 00	1	6 00	.....	.....	91	307 84
Total Water Closets... ..	844	2480 84	1232	3735 00	1902	5521 50	1285	3581 50	361	1050 00	497	1457 50	12	45 00	6133	17871 34
Water Motors.....	.....	.....	1	1 67	3	11 34	4	30 02	.....	.....	2	3 34	.....	.....	10	46 37
Water Troughs.....	.....	.....	5	50 00	3	30 00	2	15 00	8	80 00	2	20 00	.....	.....	20	195 00
Work Shops.....	21	82 00	43	164 50	55	181 00	25	75 00	5	17 00	5	19 00	1	3 75	155	542 25
Wacht.....	.....	.....	.....	.....	.....	.....	1	3 00	.....	.....	.....	.....	.....	.....	1	3 00
Grand Totals for 1901	5860	14917 62	9051	21729 39	11259	24411 99	8091	20041 47	4584	10147 10	4968	11661 58	243	1003 29	44056	103912 44
Grand Totals for 1900.....	5328	13728 08	8530	20462 19	11084	23824 50	7958	19866 05	4178	9257 56	4652	10934 78	160	904 83	41890	98977 99
Total Gain for 1901.....	532	1189 54	521	1267 20	175	587 49	133	175 42	406	889 54	316	726 80	83	98 46	2166	4934 45

RATES FOR CITY WATER.

Approved by Select Council, August 19, 1895. Approved by Common Council, September 16, 1895. Approved by the Mayor, September 21, 1895.

And as Amended and Approved November 25, 1899.

ARE ALL ANNUAL EXCEPT AS OTHERWISE INDICATED, AND PAYABLE QUARTERLY IN ADVANCE, AS FOLLOWS:

First Quarter—January, February, March—January 1st.

Second Quarter—April, May, June—April 1st.

Third Quarter—July, August, September—July 1st.

Fourth Quarter—October, November, December—October 1st.

If the rents for any quarter are not paid within the *first Month thereof*, *five per cent.* may be added. If payment is not made by the 15th day of February, May, August and November of each quarter, the water may be turned off from the premises, and shall not be turned on again without the consent of the Commissioners of Water Works, until all back rents and penalties are paid, and the further sum of one (1) dollar.

Air Pump.....	\$	3 00
Bath Tub—Private (one family) first tub.....		3 00
Bath Tub—Private (one family) each additional tub.....		1 50
Bath Tub—Public, each tub		5 00
Bakery, per barrel of flour used (but no charge less than \$5)		01
Barber Shop, first chair, including hand basin.....		4 00
Barber Shop, each additional chair, including hand basin.....		2 00
Billiard Tables, each.....		1 00
<i>Billiard Tables when floor is carpeted, one-half the above rate</i>		
Blacksmith Fire, first fire.....		5 00
Blacksmith Fire, each additional fire.....		2 50
Boarding House, (in addition to family rates) per room.....		1 00
Building Purposes, per bushel of lime; to be paid for before work is begun		02
Butcher Stalls	3 00 to 15 0	
Charitable Institutions, one-third annual rates.		
Cow.. . . .		75
Condensing Boiler for Steam Heating, (per season of 6 months) per horse power.....		25
Eating Houses.....	5 00 to 25 00	
Family.....		4 00
Fire Protection Fixtures, testing same, thirty (30) minutes or less		3 00
Fire Protection Fixtures, testing same, one (1) hour or less, but more than thirty (30) minutes.....		5 00
Flushing Sewers, settling earth in ditches or purposes of like nature, per hour, or fractional part of an hour, each.....		5 00
Gas Engines five horse power or less.....		5 00
Gas Engines, for each additional horse power.....		1 00
<i>Gas Engines, when water is used over and over again, from tank prepared for the purpose, one-half the above rates.</i>		
Hand Basins in dwellings, hotels and schools, first basin		1 00

Hand Basins in dwellings, hotels and schools, each additional basin.....	\$	50
Hand Basins in offices, stores and blocks, each.....		1 00
Hotels, (in addition to family rates) per room.....		1 00
Laundry, shop.....		5 00
Laundry, wash tub, stationary, each.....		2 00
Laundry, revolving washer, each.....		5 00
Livery Stable, per horse.....		2 00
Offices.....	3 00 to 10 00	
Private Stable, one or two horses.....		2 00
Private Stable, each additional horse over two.....		1 00
Printing Offices.....	5 00 to 30 00	
Public Halls.....	5 00 to 25 00	
Saloons.....	5 00 to 25 00	
School, per pupil (in addition to fixtures).....		10
Slaughter Houses.....	5 00 to 50 00	
Sleeping Rooms, each.....		1 00
Sprinkling Streets or Lawns with Hose, Per Season :		
Corner lot, 41 feet front or less.....		5 00
Inside lot, 41 feet front or less.....		3 00
For each additional foot front to either corner, or inside lot.....		05
Steam Engines, 10 hours per day, each Horse Power.....		2 50
Stores.....	3 00 to 15 00	
Urinal, private, self-closing, (one family).....		2 00
Urinal, private, not self-closing, (one family).....		6 00
Urinal, public, self-closing.....		3 00
Urinal, public not self-closing.....		10 00
Urinal, private or public, continuous flow.....	10 00 to 30 00	
Wash Tub, Stationary, first tub (one family).....		2 00
Wash Tub, Stationary, each additional tub, (one family).....		1 00
Water Closet, pan or tank, (one family) private.....		3 00
Water Closet, pan or tank, (one family) each additional water closet.....		1 50
Water Closet, pan or tank, public, each.....		5 00
Water Closet, hopper, (one family) private, for each water closet.....		6 00
Water Closet, hopper, public, for each water closet.....		10 00
Work Shop, ordinary use.....	3 00 to 5 00	

Sprinkling for any purpose will ONLY be allowed on premises where water is taken and paid for, for domestic or other inside use. The sprinkling season is from May 1st to November 1st, in each year.

There is no fractional part of a sprinkling season.

It will cost as much to sprinkle but once at any time during the sprinkling season as it will to sprinkle each day, at the prescribed hours, during the entire season.

Sprinkling must be confined to the hours between 5 and 8 A. M., 12 and 1 P. M. and 5 and 8 P. M., nor during said intervals more than one hour at a time. Persons who exceed one hour may be charged at fountain rates or held liable for violation of the rules, at the option of the Commissioners.

The inside diameter of hose used for sprinkling purposes must not be more than three-quarters of an inch, and the inside diameter of the orifice to the nozzle of the same must not be more than one-quarter of an inch. The use of leaky or defective hose is prohibited.

No person will be allowed to sprinkle adjoining or opposite premises, nor to use the water from any hose attachment, or through any hose

for any purpose not authorized by the Commissioners. All sprinkling devices not held in the hand when used shall be classed as fountains, or fountain jets, and assessed accordingly, *but not less than double sprinkling rates.*

Fountains, fountain jets, etc., will be assessed according to the inside diameter of its principal part or parts, and for a continuous flow during the entire sprinkling season.

Hose must not be used for cleaning streets or street gutters, for washing away collections of leaves, heaps of dirt or offal, or flooding streets.

Sprinkling fixtures, to which hose can be attached, no matter where located on any premises, makes said premises assessable for sprinkling.

All plumbing from the curb line inward must be done by a licensed plumber.

Water fixtures will be assessed for each and every purpose available, and for each family or establishment within the enclosure or separated only by a door, gateway or other means of easy communication.

No abatement of charges shall be allowed for vacancy of premises *except from the date that notice has been given at the office of the Commissioners of Water Works that they are unoccupied.*

The Commissioners may limit or stop the supply of water in cases of emergency, and shut it off for repairs or extensions, they being the judges of the time and necessity. Neither the Commissioners nor the City of Erie shall be liable in damages for any insufficient supply of City water.

For each and every violation of the rules and regulations of the Water Works, the offending party will be subject to a fine of not less than Five nor more than Fifty Dollars.

METER RATES.

Twenty (20) cents for each one thousand (1,000) gallons for the first Twenty-five Thousand (25,000) gallons, and Four (4) cents for each one Thousand (1,000) gallons consumed thereafter during each current quarter.

PROVIDED, the minimum receipts from each meter shall be as follows:

$\frac{3}{4}$ inch or less.....	\$ 3 75	1 inch.....	\$ 4 50
$1\frac{1}{2}$ inch	6 25	2 inch.....	10 00
3 inch	18 75	4 inch.....	38 75
6 inch.....	\$100 00		

TERMS: All water sold by Meter Measurement must be paid for on or before THE TENTH DAY OF THE FIRST MONTH OF EACH QUARTER. All Meter Accounts remaining unpaid at the close of business on the 10th day of said month, shall have Five Per Centum added thereto. On the 15th day of said month, WATER MAY BE TURNED OFF from the property whose meter account is unpaid, and will not be again turned on until all arrearages and penalties are paid, and the further sum of One (\$1.00) Dollar.

1900. STATEMENT OF WORK DONE BY INSPECTOR NO. 1. 1900.

MONTHS.	TURNED OFF ACCOUNT.			TURNED ON ACCOUNT.		NEW HOUSES.		FIXTURES.						Totals.
	Unpaid.	Vacancies.	Leaks and Waste.	Paid.	Occupied.	Building Purposes.	Completed	Complaints	Frozen.	Installed.	Removed.	Leaks and Waste.	Vacancies.	
January.....	.....	5	.....	.....	21	7	12	6	10	77	31	8	5	182
February.....	.....	.....	1	1	15	.....	7	4	12	122	24	7	418	615
March.....	4	.....	1	.....	28	2	24	6	36	131	19	4	.....	251
April.....	.....	.....	1	.....	38	8	43	7	.....	181	55	3	5	343
May.....	.....	2	2	.....	47	7	46	3	.....	287	33	3	.....	434
June.....	.....	6	1	.....	21	9	59	2	.....	316	25	2	471	906
July.....	.....	.....	1	.....	28	7	19	2	.....	151	23	3	.....	236
August.....	2	6	3	1	16	5	16	4	.....	109	16	2	.....	180
September.....	5	13	1	.....	28	8	24	3	.....	134	15	4	135	370
October.....	.....	17	.....	.....	37	8	30	5	.....	125	28	.....	.....	250
November.....	3	13	.....	5	25	9	37	4	.....	121	29	.....	.....	246
December.....	.....	1	.....	.....	16	5	23	2	.....	182	24	3	346	602
Total.....	14	65	11	7	320	75	340	48	58	1936	322	39	1380	4615

1900.
STATEMENT OF WORK DONE BY INSPECTOR NO. 2.
1900.

MONTH.	TURNED OFF ACCOUNT.			TURNED ON ACCOUNT.		NEW HOUSES.		FIXTURES.						Totals.
	Unpaid.	Vacancies.	Leaks and Waste.	Paid.	Occupied.	Building Purposes.	Com-pleted.	Com-plaints.	Frozen.	Installed.	Removed.	Leaks and Waste.	Vacancies.	
January.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
February.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	1	.....	.....	.....	1
March.....	.....	.....	.....	.....	.....	.....	.....	2	.....	.....	.....	.....	.....	2
April.....	.....	.....	.....	.....	.....	.....	.....	1	.....	.....	.....	.....	.....	1
May.....	.....	.....	.....	14	.....	.....	.....	.....	.....	.....	.....	.....	.....	14
June.....	2	.....	.....	1	.....	.....	.....	4	.....	.....	.....	.....	.....	7
July.....	.....	.....	.....	.....	.....	.....	.....	2	.....	.....	.....	.....	.....	2
August.....	5	5	.....	19	6	3	11	7	.....	131	2	1	2	192
September.....	.....	.....	.....	.....	1	.....	1	5	.....	7	.....	.....	.....	14
October.....	.....	1	.....	.....	1	2	.....	4	.....	1	1	.....	.....	10
November.....	.....	1	.....	.....	1	.....	.....	.....	.....	.....	.....	.....	.....	2
December.....	.....	.....	.....	.....	.....	1	.....	1	.....	1	.....	1	.....	4
Totals.....	7	7	.....	34	9	6	12	26	.....	141	3	2	2	249

1900. STATEMENT OF WORK DONE BY INSPECTOR NO. 3. 1900.

MONTHS.	TURNED OFF ACCOUNT.			TURNED ON ACCOUNT.		NEW HOUSES.		FIXTURES.						Totals.
	Unpaid.	Vacancies.	Leaks and Waste.	Paid.	Occupied.	Building Purposes.	Completed	Complaints	Frozen.	Installed.	Removed.	Leaks and Waste.	Vacancies.	
January.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	1	.....	.....	.....	1
February.....	.....	.....	.....	.....	.....	1	.....	.....	.....	3	.....	.....	.....	4
March.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	5	1	1	2	9
April.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	1	.....	1
May.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	17	.....	.....	1	18
June.....	1	1	.....	.....	.....	1	.....	.....	.....	1	.....	.....	.....	4
July.....	.....	.....	.....	.....	.....	.....	1	.....	.....	4	.....	.....	1	6
August.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	27	.....	.....	.....	27
September.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
October.....	.....	.....	.....	.....	.....	2	.....	.....	.....	3	.....	.....	9	14
November.....	3	.....	.....	4	.....	.....	.....	.....	.....	25	1	2	.....	35
December.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Total.....	4	1	.....	4	.....	4	1	.....	.....	86	2	4	13	119

1900.

Statement of Work Done at Annual Inspection by Inspector No. 2.

1900.

WARD.	ENGINES.		FIXTURES.				Hand Buisins.	Heating Boilers.	Premises.	SPRINKLERS.				TUBS.		WATER CLOSETS.		TOTAL	
	Air Pumps.	Gas.	Steam.	Draw Cocks.	Goose Necks.	Hydrants.				Curb.	Hydrant.	Lawn.	Sill Cock.	Bath.	Wash.	Urinals.	Non Closing or Hopper.		Pan or Tank.
First	2	1	7	1,728	10	195	394	13	1465	75	35	48	446	367	102	41	23	821	5,779
Second	22	0	14	2,546	6	318	497	21	2267	55	55	74	516	385	48	72	31	1,201	8,417
Third	2	1	2	1,402	3	119	104	25	1182	18	30	68	460	162	12	16	1	361	4,161
Fourth	...	...	1	48	...	4	6	3	41	1	1	5	8	5	...	...	...	...	112
Total	28	11	24	6,114	10	630	1001	62	4955	149	121	195	1,430	919	162	129	55	2,391	18,411

WARD.

1900.

Statement of Work Done at Annual Inspection by Inspector No. 3.

1900.

First	2	1	7	1,728	10	195	394	13	1465	75	35	48	446	367	102	41	23	821	5,779
Second	22	0	14	2,546	6	318	497	21	2267	55	55	74	516	385	48	72	31	1,201	8,417
Third	2	1	2	1,402	3	119	104	25	1182	18	30	68	460	162	12	16	1	361	4,161
Fourth	...	...	1	48	...	4	6	3	41	1	1	5	8	5	...	...	...	...	112
Total	28	11	24	6,114	10	630	1001	62	4955	149	121	195	1,430	919	162	129	55	2,391	18,411

PUMPING STATISTICS FOR 1900.

ENGINES.

MONTHS.	No. 3. GASKILL 5,000,000 GALLONS		No. 4. WORTHINGTON 12,000,000 GALLONS		No. 5. WORTHINGTON. 8,000,000 GALLONS.	
	SERVICE.		SERVICE.		SERVICE.	
	HIGH.		LOW.		LOW.	
	<div>Days in Month</div>	Gallons.	<div>Days in Month</div>	Gallons.	<div>Days in Month</div>	Gallons.
January.....	31	81,721,458	1	9,727,896	31	191,775,936
February.....	22	59,616,284	28	192,602,184	6	19,744,032
March.....	27	72,925,034	9	52,883,808	22	149,639,160
April.....	.....	.....	30	152,917,248	.....	.....
May.....	26	73,002,020	31	187,793,160	.....	.....
June.....	.....	.....	30	165,682,248	.....	.....
July.....	2	5,538,624	29	158,198,232	.....	.....
August.....	22	54,643,134	21	134,040,504	11	69,666,696
September.....	11	27,422,486	26	146,731,432	5	26,755,872
October.....	31	71,124,690	11	69,125,304	20	122,178,408
November.....	30	73,979,906	22	139,562,160	7	40,244,688
December.....	.....	.....	31	166,922,040	.....	.....
Total.....	202	519,973,636	269	1,576,186,216	96	600,260,760
Daily Average.....	.....	1,424,585	.....	4,318,318	.....	1,644,550
						2,817,208

PUMPING STATISTICS FOR 1900.— Continued.

MONTHS.	ENGINES.				TOTAL.		DAILY AVERAGE	AVERAGE LIFT IN FEET.			
	TOTALS.										
	SERVICE.				Gallons.	Days		HIGH.	LOW.		
	HIGH.	Gallons.	Days	LOW.							
January.....	31	81,721,458	32	201,503,832	283,225,290	63	9,136,299	.....	235.76	
February.....	28	79,360,316	28	192,602,184	271,962,500	56	9,712,946	.....	235.64	
March.....	32	89,390,714	31	202,522,968	291,913,682	63	9,416,570	.....	235.52	
April.....	30	63,351,288	30	152,917,248	216,268,536	60	7,208,951	298.68	235.50		
May ..	31	83,906,276	31	187,793,160	271,699,436	62	8,764,497	292.65	235.30		
June.....	30	89,601,600	30	165,682,248	255,283,848	60	8,509,461	289.03	235.39		
July.....	31	83,245,440	29	158,198,232	241,443,672	60	7,788,505	291.82	234.40		
August.....	30	81,008,550	32	203,707,200	284,715,750	62	9,184,379	290.11	235.35		
September.....	32	82,569,974	31	173,487,304	256,057,278	63	8,601,909	291.94	235.81		
October...	31	71,124,690	31	191,303,712	262,428,402	62	8,465,432	289.42	235.83		
November	30	73,979,906	29	179,806,848	253,786,754	59	8,459,558	287.78	235.42		
December.....	31	68,733,456	31	166,922,040	235,655,496	62	7,601,790	289.58	235.63		
Total.....	367	947,993,668	365	2,176,446,976	3,124,440,644	732	8,560 111	291 22	235.46		
Daily Average.....	.....	2,597,243	.....	5,962,868	8,560,111	.....	.....	.....	.....

PUMPING STATISTICS.

There are five pumping engines.

Nos. 1 and 2 are Cornish Bull Pumps, erected in 1868; alike in their dimensions, which are as follows: Steam cylinders, 60 inches in diameter; Pump Plunger, $20\frac{1}{4}$ inches in diameter, each 10-foot stroke, capacity being 165 gallons per stroke, pumping 2,000,000 gallons daily. These pumps are out of commission, the cost for repairs being greater than they are worth.

No. 3 is a Gaskill Horizontal Compound Pumping Engine, erected in 1886, having two H. P. Cylinders, 21 inches in diameter, two L. P. Cylinders, 42 inches in diameter, two pumps, $19\frac{1}{2}$ inches in diameter, all 36-inch stroke; capacity being 182 gallons per revolution, pumping 5,000,000 gallons daily.

No. 4 is a Worthington Horizontal Compound High Duty Pumping Engine erected in 1893, having two H. P. Cylinders, 33 inches in diameter, two L. P. Cylinders, 66 inches in diameter, two pumps, 29 inches in diameter, all $49\frac{3}{4}$ -inch stroke; capacity being 552 gallons per stroke pumping 12,000,000 gallons per day, at a piston speed of 128 feet per minute, against a head of 260 feet.

No. 5 is a Worthington Horizontal Compound High Duty Pumping Engine, erected in 1899, having two H. P. Steam Cylinders, each 25 inches in diameter two L. P. Cylinders, each 50 inches in diameter, two double acting water, plungers, each 23 inches in diameter, all 36-inch stroke; capacity being 264 gallons per stroke, pumping 8,000,000 gallons per day, at a piston speed of 136 feet per minute, against a total load of 142 pounds per square inch (a head of 328 feet).

There are two intakes, one constructed in 1868, of which 52 feet is brick 14 feet in diameter, 590 feet is wood, $4\frac{1}{4}$ feet in diameter, and 333 feet is boiler iron, 4 feet in diameter, making a total length of 975 feet. The top of the outer end of this intake is four feet below the zero level of the bay, and as it approaches the shore ascends until the top is only two feet above the zero level of the bay. *This intake has not been used since the new one was completed, and as the part made of wood has not been submerged for some time it is undoubtedly past use.* The second intake was completed in 1896. It is made of cast iron, 60 inches internal diameter, 8,307.18 feet long, buried in the bottom of the bay; at no place is there less than three feet of earth over its top. The outer end terminates in an octagonal crib, 40 feet being its extreme width, and 8 feet high, the top being 13 feet below the zero level of the bay. So far as we know, this is the longest single piece of submerged 60-inch cast iron pipe in the world.

The stand pipe was erected in 1868. It is 5 feet in diameter and 259.65 feet in height. A spiral staircase surrounds it and all enclosed in brick. So far as we know, this is the tallest standpipe in the world.

The boiler house was erected in 1897 and is 74 feet wide, 102 feet long, and 25 feet from floor line to bottom of cords to roof. On the north side eight horizontal tubular boilers are installed in batteries of two each. The boilers are 72 inches in diameter, 18 feet long, without domes, and contain 80 4-inch lap welded tubes, capable of carrying 150 lbs. pressure to the square inch.

On the south side of the house can be erected an equal number of the same size boilers, but until these are required the room is used for storing coal; the bins now in place hold 800 tons of coal.

On the north side of the boiler house, near the east end, is a self-sustaining steel plate chimney, 175 feet high, 75 inches internal diameter, lined with fire-brick to a height of 80 feet. This chimney was erected in 1897.

The Reservoir was constructed in 1873 and is about two miles distant from the Pumping Station, the bottom of which is 210 feet above the zero level of the water in the bay, and when the water is carried to a depth of 27 feet, holds 32,952,934 gallons of water.

The regular employees at the Pumping Works are one chief engineer, one machinist, two assistant engineers, three greasers, three firemen, one assistant fireman, one watchman and keeper of grounds, and one janitor. The chief engineer stands a watch of five hours, from 7 to 12 every forenoon; the assistants divide the remainder of each day equally between them.

FIRE HYDRANTS PLACED IN 1900.

STREET.	LOCATION.	SIZE.	STYLE.	REMARKS.
Front.....	405 feet East of German.....	4 inch	Mathew's.....	
Second.. ..	120 ⁰ feet East of Wallace.....	4-inch	"	
Third.....	N. W. Corner Chestnut.....	6-inch	"	In place of Bay State.
"	N. E. Corner Holland.....	6-inch	"	In place of 4-inch Mathew's.
Fourth.....	N. W. Corner Walnut.....	6-inch	"	In place of 4 inch Pittsburg
"	N. E. Corner Wallace.....	6-inch	"	
"	N. E. Corner Cherry.. ..	6-inch	"	In place of 4-inch Mathew's.
Fifth.....	393 feet East of Reed.....	.....	.....	4 inch Mathew's taken out.
Lake Road	N. E. Corner Hess Avenue.....	6-inch	Mathew's.....	
Eighth.....	421 ⁰ feet West of Payne Avenue.	4-inch	"	
"	N. E. Corner Wayne.....	6-inch	"	
"	240 ⁰ feet East of Wayne.....	.....	.....	4-inch Mathew's taken out.
McCarter Ave..	408 feet East of East Avenue.....	4 inch	Mathew's.....	
Columbus.....	249 feet East of Pennsylvania Avenue	6-inch	"	
Ninth.....	151 feet East of Raspberry.....	4-inch	"	
Tenth.. ..	N. W. Corner Chestnut.....	6-inch	"	
Twelfth.. ..	354 feet West of Cranberry.....	6-inch	"	
Thirteenth.....	321 feet West of Holland.....	6 inch	"	In place of 4-inch Mathew's.
Fourteenth.....	N. W. Corner Ash	6-inch	"	
Eighteenth.....	N. W. Corner Wayne.....	.....	.....	4-inch Ludlow taken out.
"	N. E. Corner Wallace.....	.....	.....	4-inch Mathew's taken out.
"	N. E. Corner Cranberry.....	6-inch	Mathew's.....	
"	N. W. Corner Cranberry .....	.....	.....	4-inch Mathew's taken out.
Nineteenth.....	399 ⁰ feet East of Parade.....	6-inch	Mathew's.....	
"	N. E. Corner Plum.....	6-inch	"	
"	265 feet East of Cascade.....	.....	.....	4-inch Mathew's taken out.
"	N. W. Corner Myrtle.....	6-inch	Mathew's.....	In place of 4-inch Mathew's.
Brown Ave.....	N. E. Corner Cascade.....	6-inch	"	
"	193 ^a feet West of Cascade .....	.....	.....	4-inch Mathew's taken out.
Twenty-first.....	N. E. Corner Holland.....	6-inch	Mathew's.....	In place of 4-inch Pittsburg.
"	N. E. Corner Chestnut	6-inch	"	In place of 4-inch Mathew's.
Twenty-second..	526 ⁰ feet East of Warfel Avenue.....	4-inch	Bay State.....	
"	272 ^a feet West of Reed.....	.....	.....	4 inch Bay State taken out.
Twenty-fourth ..	80 feet East of Pennsylvania Avenue..	4 inch	Mathew's.....	
"	83 ^a feet West of Pennsylvania Avenue ..	4-inch	Ludlow.....	

FIRE HYDRANTS PLACED IN 1900—Continued.

STREET.	LOCATION.	SIZE.	STYLE.	REMARKS.
Twenty-fourth.	147 ⁴ feet West of Liberty.....	.....	.....	4-inch Pittsburg taken out.
"	43 feet East of Wallace.....	.....	.....	4-inch Bay State taken out.
Twenty-sixth ..	N. E. Corner Wallace.....	6-inch	Mathew's.....	
"	N. E. Corner Ash.....	6-inch	".....	
"	N. E. Corner Reed.....	6-inch	".....	
"	N. E. Corner Wayne.....	6-inch	".....	
"	610 ⁴ feet East of Ash.....	.....	.....	4-inch West Jersey taken out.
Twenty-seventh	299 ⁴ feet East of Pennsylvania Avenue.....	4-inch	Bay State.....	
"	215 ⁴ feet East of Pennsylvania Avenue.....	.....	.....	4 inch Bay State taken out.
Twenty-eighth..	574 feet East of Ash.....	6-inch	Mathew's.....	
"	114 feet West of Parade.....	4-inch	".....	
Eliot Ave.....	N. E. Corner Peach.....	6-inch	".....	In place of 4-inch Bay State.
Hess Ave.....	N. E. Corner Seventh.....	6-inch	".....	
East Ave	S. E. Corner Twenty-fifth.....	4-inch	".....	In place of 4-inch Pittsburg.
"	494 ² feet South of Twelfth.....	6-inch	".....	
"	N. E. Corner Centre.....	6-inch	".....	
Wayne.....	98 feet North of Eighth.....	.....	.....	6-inch Mathew's taken out.
Reed.....	S. E. Corner Eighteenth.....	6-inch	Mathew's.....	
Ash.....	85 ² feet South of Nineteenth.....	4-inch	".....	
Wallace.....	S. E. Corner Eighteenth.....	6-inch	".....	
"	S. E. Corner Twenty-fourth.....	6-inch	".....	
"	S. E. Corner Twenty-sixth.....	.....	.....	6-inch Mathew's taken out.
Parade	N. E. Corner Fourth.....	6-inch	Mathew's.....	
"	79 ³ feet North of Fifteenth.....	6-inch	".....	In place of 4-inch West Jersey.
Loesel Ave.	N. E. Corner Nineteenth.....	4-inch	".....	
Chestnut.....	251 ² feet South of Twelfth.....	6-inch	".....	In place of 4-inch Mathew's.
Maple	190 ⁶ feet North of Twenty-ninth.....	4-inch	".....	In place of 4-inch Bay State.
Poplar.....	98 feet South of Fourth.....	6-inch	".....	
Liberty.....	721 feet South of Twenty-sixth.....	4-inch	".....	
"	395 ⁴ feet South of Twenty-sixth.....	.....	.....	4-inch Mathew's taken out.
"	S. E. Corner Fifth.....	6-inch	Mathew's.....	
"	111 ⁵ feet North of Tenth.....	4-inch	".....	
Plum	N. E. Corner Seventeenth.....	4-inch	".....	
"	N. E. Corner Twenty-fourth.....	4-inch	Pittsburg.....	
Raspberry.....	138 feet South of Fourth.....	6-inch	Mathew's.....	
Cranberry.....	S. E. Corner Seventeenth.....	6-inch	".....	

**SUMMARY OF
FIRE HYDRANTS PLACED AND REMOVED IN 1900.**

<i>Placed.</i>		
STYLE—	SIZE.	NUMBER.
Mathew's.....	4-inch.	14
Mathew's.....	6-inch.	38
Bay State.....	4-inch.	2
Ludlow.....	4-inch.	1
Pittsburg.....	4-inch.	1
		<hr/> 56
<i>Removed.</i>		
STYLE—		
Mathew's.....	4-inch.	13
Mathew's.....	6-inch.	2
Bay State.....	4-inch.	6
Ludlow.....	4-inch.	1
Pittsburg.....	4-inch.	4
West Jersey.....	4-inch.	2
		<hr/> 28
Net increase.....		<hr/> 28
Number in use December 31st, 1899.....		567
Total in use December 31st, 1900.....		<hr/> 595

STOP VALVES PLACED IN 1900.

STREET.	WHERE LOCATED.	SIZE.	STYLE.	REMARKS.
Front.....	31 feet South of South line of Engine Room No. 3	30-inch	Eddy	At Pumping Station.
Second.....	261 ¹⁰ feet East of East line of Electric Room.....	4-inch	"	For main in alley.
Third.....	197 ⁷ feet West of Holland.....	20-inch	"	
"	114 feet South of North line of Second			
Fourth.....	East line of Holland.....			
"	East line of State.....	6-inch	Eddy	4-inch Eddy taken out.
"	East line of Cherry.....	4 inch	"	
"	West line of Cherry.....	6-inch	"	In place of 4-inch Ludlow.
"	West line of Walnut.....	6-inch	"	
"	East line of Wallace.....	6-inch	"	
"	West line of German.....	6-inch	"	
Fifth.....	West line of Wayne.....	6-inch	"	
"	East line of Wayne.....	6-inch	"	
Lake Road.....	West line of Hess Ave.....	6-inch	"	
Seventh.....	144 ⁷ feet East of Reed.....	1-inch	Hays	
Eighth.....	East line of Wayne.....	6-inch	Eddy	
Ninth.....	West line of Sasafra.....	4-inch	"	
"	West line of Myrtle.....	4-inch	"	
"	East line of Raspberry.....	6-inch	"	
Thirteenth	East line of German.....	4-inch	"	
Fourteenth.....	West line of Ash.....	4-inch	"	
"	East line of German.....	4-inch	"	
"	East line of Ash.....	4-inch	"	
Fifteenth.....	West line of Wallace.....	6-inch	"	
"	West line of Ash.....	4-inch	"	
Sixteenth.....	East line of Cranberry.....	6-inch	"	
Seventeenth.....	13 feet East of West line of Chestnut	4-inch	"	
Eighteenth.	East line of Parade.....	6-inch	"	
"	East line of Wallace.....	6-inch	"	
"	West line of Wallace.....	6-inch	"	

STOP VALVES PLACED IN 1900—Continued.

STREET.	WHERE LOCATED.	SIZE.	STYLE.	REMARKS.
Eighteenth.....	East line of Ash.....	6-inch	Eddy	
"	West line of Perry.....	6-inch	"	
"	95 feet East of Wayne	4-inch	"	In place of old 4 inch Ludlow.
"	West line of Reed	6-inch	"	
"	East line of Reed.....	6-inch	"	
"	West line of Ash.....	6-inch	"	
"	East line of Cranberry.....	6-inch	"	
Nineteenth	East line of Parade.....	6-inch	"	
"	West line of Liberty	6-inch	"	
"	West line of Plum.....	6-inch	"	
"	East line of Plum.....	6-inch	"	
"	West line of Peach.....	6-inch	"	
"	East line of Sassafras.....	6-inch	"	For High Service System.
"	West line of Myrtle.....	6-inch	"	For High Service System.
Brown's Ave.. ..	East line of Cascade.....	6-inch	"	For High Service System.
"	East line of Poplar.....	6-inch	"	
"	East line of Raspberry.....	6-inch	"	
Twenty-first	East line of Plum.....	6-inch	"	
"	West line of Plum	6-inch	"	
"	13 ¹² feet East of Chestnut.....	12-inch	Pratt & Cady	Swing Flanged Check Valve.
"	17 ² feet East of Chestnut.....	12-inch	Eddy	
Twenty-second ..	East line of Ash.....	6-inch	"	
"	14 feet West of East line of Chestnut	6-inch	"	
Twenty-third....	14 feet West of East line of Chestnut	6-inch	"	
Crommell Ave..	East line of Poplar.....	6-inch	"	
Twenty-fourth..	West Line of Pennsylvania Ave.....	6-inch	"	
"	East line of Chestnut.....	6-inch	"	In place of 4-inch Eddy.
"	14 ⁶ feet West of East line of Chestnut	6-inch	"	
"	East line of Wallace	6-inch	"	
"	East line of Plum.....	6-inch	"	

STOP VALVES PLACED IN 1900—Continued.

STREET.	WHERE LOCATED.	SIZE.	STYLE.	REMARKS.
Twenty-fifth.....	East line of Chestnut.....	6-inch	Eddy	In place of 4-inch Ludlow.
".....	West line of Wallace.....	4-inch	"	"
Twenty-sixth....	East line of Wallace.....	12-inch	"	In place of 6-inch Eddy.
".....	East line of Ash.....	12-inch	"	In place of 6-inch Eddy.
".....	East line of Reed.....	12-inch	"	"
".....	East line of Wayne.....	12-inch	"	"
".....	East line of East Ave.....	6-inch	"	6-inch Eddy taken out.
Twenty-eighth..	West line of Wallace.....	"	"	"
".....	East line of Ash.....	6-inch	"	"
".....	West line of Parade.....	6-inch	"	"
Twenty-ninth..	East line of Plum.....	$\frac{3}{4}$ -inch	Hays	"
East Avenue..	487 $\frac{3}{4}$ feet South of Twelfth.....	6-inch	Eddy	For Erie City Iron Works.
Wayne.....	3 feet West of West line of East Ave.	"	"	"
".....	North line of Twenty-fifth.....	6-inch	"	"
".....	South line of Nineteenth.....	6-inch	"	"
Reed.....	North line of Twenty-sixth.....	6-inch	"	"
Ash.....	North line of Twenty-sixth.....	6-inch	"	"
".....	South line of Nineteenth.....	6-inch	"	"
".....	North line of Twenty-sixth.....	4 inch	"	"
".....	South line of Twenty-sixth.....	4 inch	"	"
Wallace.....	North line of Twenty-sixth.....	6-inch	"	"
".....	74 feet South of Eighteenth.....	$1\frac{1}{4}$ -inch	Hays	"
".....	South line of	6-inch	Eddy	"
".....	North line of	4-inch	"	"
Parade.....	North line of	6-inch	"	"
Loesel Avenue..	South line of	4-inch	"	"
German.....	North line of Third.....	4-inch	"	"
".....	South line of Third.....	4-inch	"	"
Peach.....	21 feet North of South line of 19th.....	6-inch	"	For High Service System.
Sassafras.....	20 $\frac{1}{2}$ feet North of South line of 19th.....	6-inch	"	For High Service System.

STORY OF THE LIFE OF A MISSIONARY

Species	Where found	Size	Color	Remarks
North	20 feet North of South line of 10th	6 inch	Reddy	Foot 10th 10th 10th 10th
Hickory	South line of 16th	4 inch	"	
Chestnut	South line of 20th	6 inch	"	
"	South line of 20th	6 inch	"	
"	23 feet South of North line of 25th	6 inch	"	
"	South line of 20th	6 inch	"	
"	North line of 20th	4 inch	"	
"	15 feet North of 20th	4 inch	"	
"	78 feet East of West line of 10th			
Walnut	160 feet South of Second	4 inch	Reddy	Foot 10th 10th 10th 10th
Cherry	West line of Walnut	4 inch	"	Foot 10th 10th 10th 10th
Poplar	160 feet South of Second	4 inch	"	Foot 10th 10th 10th 10th
"	East line of Cherry	6 inch	"	
Liberty	North line of 10th	6 inch	"	
"	South line of 10th	6 inch	"	
"	630 feet South of 20th	6 inch	"	
"	North line of 20th	6 inch	"	
"	North line of 10th	6 inch	"	
Plum	South line of 20th	6 inch	"	
"	25 feet South of North line of 20th	4 inch	Reddy	Foot 10th 10th 10th 10th
"	1 foot North of North line of 20th	6 inch	"	
"	North line of 20th	6 inch	"	
Raspberry	South line of 20th	6 inch	"	
Cranberry	South line of 16th	6 inch	"	
"	North line of 18th	6 inch	"	

**SUMMARY OF
STOP VALVES PLACED AND REMOVED IN 1900.**

<i>Placed.</i>		
STYLE—	SIZE.	NUMBER.
Hays.....	$\frac{3}{4}$ -inch.	1
Hays... ..	1 -inch.	1
Hays.....	$1\frac{1}{4}$ -inch.	1
Hays	2 -inch.	1
Eddy.....	4 -inch.	21
Eddy.....	6 -inch.	72
Eddy.....	12 -inch.	5
Eddy	20 -inch.	1
Eddy.....	30 -inch.	1
Pratt & Cady.....	12 -inch.	1
Total... ..		<hr/> 105
<i>Removed.</i>		
STYLE—		
Hays.	2 -inch.	1
Eddy	4 -inch.	3
Eddy	6 -inch.	3
Ludlow.....	4 -inch.	3
Total.....		<hr/> 10
Net increase.....		<hr/> 95

Main Pipe Laid in 1900.

STREET.	LOCATION.	SIZES.								REMARKS.
		3/4 in.	1 in.	1 1/4 in.	2 in.	4 in.	6 in.	12 in.	20 in.	
Front.....	495 ft. East of German.....	Feet In.	Feet In.	Feet In.	Feet In.	Feet In.	Feet In.	Feet In.	Feet In.	Hydrant Branch. For line of main in alley. Hydrant Branch. In place of 671.6 ft. 4-in. taken out.
Second....	197.2 ft. West of Holland.....	.....	.....	.....	.....	10	.....	.....	.....
Second.....	129.6 ft. East of Wallace.....	.....	.....	.....	.....	10	.....	.....	.....
Third.....	From Holland Eastward.....	.....	.....	.....	.....	7 9	.....	.....	671 6
Third.....	5 ft. East of Holland.....	7 4	Hyd't Branch place of 4 1/2 ft. 4-in. Hyd't Branch taken out.
Fourth.....	5 ft. East of Cherry.....	.....	.....	.....	.....	.....	7 2	.....	.....
Fourth.....	From Walnut to Cherry.....	720	In place of 720 ft. 4-in. taken out.
Fourth.....	5.6 ft. West of Walnut.....	7	Hyd't Branch place of 9 ft. 4-in. Hyd't Branch taken out.
Fourth.....	Between Parade and Wallace...	.....	.....	.....	.....	.....	443	.....	.....
Fourth.....	From Wallace Eastward.....	239	Hydrant Branch. 33.10 ft. of 2 in. taken out at intersection of 4th and Raspberry.
Fourth.....	5 ft. East of Wallace.....	.....	.....	.....	.....	.....	8 2	.....	.....
Fourth.....	Intersection of Cranberry.....	12 4	6.4 ft. 4-in. Hyd't Branch taken out 393.6 ft. east of Reed.
Fifth.....	Between Reed and Wayne.....	.....	.....	.....	.....	.....	262 6	.....	.....
Lake Road.....	From Hess Avenue Westward..	48 10	Hydrant Branch. *Hydrant Branch. In place of 222.6 ft. 1-in. taken out.
Lake Road.....	5 ft. East of Hess Avenue.....	.....	.....	.....	.....	.....	13 7	.....	.....
Seventh.....	Between Reed and Wayne.....	*Hydrant Branch. In place of 222.6 ft. 1-in. taken out.
Eighth.....	Between Hess and Payne Ave.	.....	234	.....	.....	*9 6	38 6	.....	.....
Eighth.....	Between Wayne and Perry.....	.....	.....	.....	.....	.....	245	.....	.....

Eighth.....	6.3 ft. East of Wayne.....	.....	.....	.....	.....	8 9	{ Hydrant Branch. 8.3 ft. 4-in. Hyd't Branch taken out 240.6 ft. East of Wayne. Hydrant Branch.
Columbus.....	249 ft. East of Penna. Ave.....	.....	.....	.....	.....	10	{
Ninth.....	Between Liberty and Plum.....	.....	.....	.....	.....	248	{
Ninth.....	Bet Cascade and Raspberry.....	.....	.....	.....	*9 6	172	{
Tenth.....	11.8 ft. West of Chestnut.....	.....	.....	.....	.....	5 2	{
Twelfth.....	354 ft. West of Cranberry.....	.....	.....	.....	.....	11 9	{
Twelfth.....	353 6 W. of Cranberry Westw'd.....	.....	.....	.....	.....	138	{
Thirteenth.....	321 ft. West of Holland.....	.....	.....	.....	.....	8 6	{
Fourteenth.....	5 ft. West of Ash.....	.....	.....	.....	.....	8 10	{
Fourteenth.....	From Ash Eastward.....	.....	.....	.....	.....	51	{
Sixteenth.....	Bet. Raspberry and Cranberry..	.....	.....	.....	.....	202	{
Sixteenth.....	Between Myrtle and Chestnut..	.....	.....	.....	.....	353 4	{
Eighteenth.....	Between Wayne and Perry.....	.....	.....	.....	.....	558	{
Eighteenth.....	6.4 ft. West of Buffalo Road.....	.....	.....	.....	.....	20	{
Eighteenth.....	N. W. Cor. Wayne.....	.....	.....	.....	.....	.....	{
Eighteenth.....	5 ft. East of Cranberry.....	.....	.....	.....	.....	7 2	{
Buffalo Road ..	From Inters. of Perry southw'd ..	.....	.....	.....	.....	67	{
Nineteenth.....	Between Liberty and Cascade..	.....	.....	.....	.....	858	{
Nineteenth.....	From Parade Eastward.....	.....	.....	.....	.....	429 6	{
Nineteenth.....	399.6 ft. East of Parade.....	.....	.....	.....	.....	9	{
Nineteenth.....	5 ft. East of Plum..	.....	.....	.....	.....	7	{
Nineteenth.....	From Peach to Sassafras.....	.....	.....	.....	.....	726	{
Nineteenth.....	From Myrtle to Chestnut.....	.....	.....	.....	.....	687 6	{
Brown Avenue..	Between Plum and Cascade.....	.....	.....	.....	.....	645	{

Main Pipe Laid in 1900.—Continued.

STREET.	LOCATION.	SIZES.								REMARKS.
		¾ in.	1 in.	1¼ in.	2 in.	4 in.	6 in.	12 in.	20 in.	
		Feet. In.	Feet. In.	Feet. In.	Feet. In.	Feet. In.	Feet. In.	Feet. In.	Feet. In.	
Brown Avenue..	Between Cherry and Poplar.....	.....	.....	.....	.....	.....	310	.....	.....	Hyd't Branch. 15 ft. 4 in. Hydrant Branch taken out 193.6 ft. West of Cascade.
Brown Avenue..	Bet. Cascade and Raspberry.....	.....	.....	.....	.....	.....	560	.....	.....
Brown Avenue..	14 ft. East of Cascade.....	.....	.....	.....	.....	.....	14 4	.....	.....	Hyd't Branch. In place of 8.7 ft. 4 in. Hyd't Branch taken out.
Twenty-first.....	8 ft. East of Holland.....	.....	.....	.....	.....	.....	8 6	.....	.....
Twenty-first.....	From Plum Eastward.....	.....	.....	.....	.....	.....	190	.....	.....	Hyd't Branch. In place of 8.5 ft. 4 in. Hyd't Branch taken out 9 ft. East of Chestnut.
Twenty-first.....	27.6 ft. East of Chestnut.....	.....	.....	.....	.....	.....	4 6	.....	.....
Twenty-second.	Between Ash and Reed.....	.....	.....	.....	.....	.....	165 3	.....	.....	Hydrant Branch.
Twenty-second.	Between Brandes and Elm.....	.....	.....	.....	.....	.....	37 6	.....	.....
Twenty-second.	526.6 ft. East of Warfel Avenue.	.....	.....	.....	.....	8	.....	.....	.....	Hydrant Branch.
Twenty-third....	Between Liberty and Plum.....	.....	.....	.....	.....	.....	207 6	.....	.....
Twenty-fourth..	80 ft. East of Penna. Ave.....	.....	.....	.....	.....	9 6	.....	.....	.....	*Hydrant Branch.
Twenty-fourth..	From Penna. Ave. Westward.....	.....	.....	.....	.....	*10	122 6	.....	.....
Twenty-fourth..	From line of Main on Chestnut Eastward.....	.....	.....	.....	.....	.....	17 9	.....	.....	In place of 17.9 ft. 4 in. taken out.
Twenty-fourth..	From Wallace Eastward....	.....	.....	.....	.....	.....	64	.....	.....	10 ft. 4 in. Hyd't Branch taken out, 43 ft. East of Wallace.
Twenty-fourth..	Between Liberty and Plum.....	.....	.....	.....	.....	.....	203 6	.....	.....
Twenty-fourth..		.....	.....	.....	.....	.....		.....	.....	9.6 ft. 4 in. Hyd't Branch taken out, 147.6 ft. West of Liberty

[illegible]

Main Pipe Laid in 1900.—Continued.

STREET.	LOCATION.	SIZES							REMARKS.	
		¾ in.	1 in.	1¼ in.	2 in.	4 in.	6 in.	12 in.		20 in.
Reed.....	Intersection of 18th.....	Feet. In.	Feet. In.	Feet. In.	Feet. In.	Feet. In.	Feet. In.	Feet. In.	Feet. In.	Acc't Street Paving.
Reed...	From 18th Southward.....	.....	.....	.....	.....	.....	16	.....	.....
Reed...	5 ft. South of 18th....	.....	.....	.....	.....	.....	43 9	.....	.....	Hydrant Branch.
Ash.....	From 28th Northward.....	.....	.....	.....	.....	.....	8 7	.....	.....
Ash.....	From 14th to 15th.....	.....	.....	.....	.....	.....	50	.....	.....	Acc't Street Paving.
Ash.....	Intersection of 18th.....	.....	.....	.....	.....	.....	285	.....	.....
Ash.....	7 ft. South of 18th.....	.....	.....	.....	.....	.....	17 6	.....	.....	{
Ash.....	From 22nd Southward.....	.....	.....	.....	.....	.....	8	.....	.....
Ash.....	Between 18th and 20th.....	.....	.....	.....	.....	.....	60 9	.....	.....	Hyd't Branch. In place of 8.3 ft. 4 in. hyd't branch taken out.
Ash.....	85 ft. South of 19th.....	.....	.....	.....	.....	.....	168 8	.....	.....
Wlance.....	5 ft. South of 18th.....	.....	.....	.....	.....	.....	10	.....	.....	Hydrant Branch.
Wallace..	6.4 ft. South of 24th.....	.....	.....	.....	.....	.....	8 9	.....	.....
Wallace.....	From 24th to 25th..	.....	.....	.....	.....	.....	8 7	.....	.....	Hydrant Branch.
		.....	.....	.....	.....	.....	330	.....	.....
Wallace.....	Intersection of 18th.....	.....	.....	.....	.....	.....	55	.....	.....	9.3 ft. 4 in. Hyd't Branch taken out, 5 ft. South of 26th.
Wallace.....	From 18th Southward.....	.....	.....	138 6	.....	.....		.....	.....
Wallace.....	From 15th Northward. ....	.....	.....	.....	.....	.....	104	.....	.....	Acc't Street Paving.
German.....	From 14th to 15th.....	.....	.....	.....	.....	.....	147	.....	.....
Hickory.....	From 16th Southward.....	.....	.....	.....	.....	.....	40 6	.....	.....	92.10 ft. 3 in. pipe abandoned from 13.6 ft. E. of Chestnut on 24th to 16 ft. N. of 24th on west side of Chestnut.
		
Chestnut.....	From 24th to 26th.....	.....	.....	.....	.....	.....	708	.....	.....	{
		
Chestnut.....	251.9 ft. South of 12th.....	.....	.....	.....	.....	.....	3 7	.....	.....	{
		
		Hyd't Branch In place of 2.1 ft. 4 in. hyd't branch taken out.

Chestnut.....	From 22nd to 23rd.....
---------------	------------------------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------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Private Pipe, Erie City Iron Works.

Summary of Main Pipe Laid and Removed in 1900.

PIPE LAID—		Feet.	Inches.				
¾-inch.....		154	6				
1-inch.....		234					
1½-inch.....		138	6				
2-inch.....		239					
4-inch.....		1,214					
6-inch.....		17,763	7				
12-inch.....		2,287					
20-inch.....		671	6				
				Total,	22,702		1
PIPE REMOVED—		Feet.	Inches.				
1-inch.....		222	6				
2-inch.....		386	10				
3-inch.....		92	10				
4-inch.....		2,166	1				
6-inch.....		1,272	2				
				Total,	4,140		5
				Total,	18,561		8
Private pipe laid for Erie City Iron Works, 6 inch.....					238		
						Feet.	Inch.
				Net Total.....	18,799		8
				Or	3 miles	2,959	8
Previously reported.....					103 miles	3,424	9
Grand total.....					107 miles	1,104	5

CROSSES PLACED IN 1900.

SIZE.	NUMBER.	
6 x 4-inch.....	2	
6 x 6-inch.....	26	
12 x 6-inch	4—	32

REMOVED IN 1900.

SIZE.	NUMBER.	
4 x 4-inch.....	5	
6 x 4-inch.....	1	
6 x 6-inch... ..	2—	8
		—
Net increase.....		24

TEES PLACED IN 1900.

SIZE.	NUMBER.	
4 x 4-inch.....	2	
6 x 4-inch....	4	
6 x 6-inch.....	30	
12 x 6-inch.....	5	
20 x 6-inch.....	1—	42

REMOVED IN 1900.

SIZE.	NUMBER.	
4 x 4-inch.....	6	
6 x 4-inch.....	9	
6 x 6-inch.....	2	
12 x 4-inch	1—	18
		—
Net increase.....		24

Connections Made in 1900.

WARD.	3/4-Inch.		1-Inch.		1 1/8-Inch.		2-Inch.		3-Inch.		4-Inch.		6-Inch.		Total-Connections.	
	No.	Feet In.	No.	Feet In.	No.	Feet In.	No.	Feet In.	No.	Feet In.	No.	Feet In.	No.	Feet In.		Feet. In.
First.....	87	1492	8	.....	2	54	1	11	.....	.....	1	1	.....	.....	91	1,558
Second.....	42	637	10	.....	.....	.....	.....	.....	.....	.....	3	33	2	75	47	746
Third.....	32	677	10	.....	1	9	2	65	.....	.....	1	11	.....	.....	38	780
Fourth.....	40	577	5	.....	5	112	.....	.....	.....	.....	.....	.....	.....	.....	47	729
Fifth.....	98	1816	1	.....	.....	.....	1	6	.....	.....	1	27	.....	.....	100	1,849
Sixth.....	63	1159	6	.....	.....	.....	1	25	.....	.....	1	36	.....	.....	65	1,221
Seventh....	7	133	.....	.....	.....	.....	1	13	.....	.....	.....	.....	2	116	10	262
Total.....	369	6494	4	4	57	2	8	175	2	6	121	6	7	108	10	398
													4	191	8	7,148

Connections Taken Out in 1900.

First.....	5	113	10	.....	1	25	6	.....	.....	.....	.....	.....	.....	.....	6	139
Second.....	1	8	3	.....	.....	.....	1	4	.....	.....	.....	.....	1	3	4	44
Third.....	3	138	7	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	3	138
Fourth.....	2	20	1	.....	.....	.....	1	7	9	.....	.....	.....	.....	.....	3	27
Fifth.....	1	25	6	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	1	25
Sixth.....	1	59	4	.....	.....	.....	.....	.....	1	92	10	.....	.....	.....	2	152
Seventh.....	.....	.....	.....	1	9	.....	.....	.....	.....	.....	.....	.....	.....	.....	1	9
Total.....	13	365	7	2	37	9	1	11	9	1	92	10	1	3	20	536
Net increase.....	356	6128	9	2	19	5	7	149	8	4	109	9	7	108	10	378

N. B.—One 3-inch connection, 92¹⁰ feet pipe, is deducted from net increase of connections and pipe.

Connections Renewed and Altered in 1900.

Gain in Service Pipe		Less in Service Pipe.		Feet. Inch.	
Feet.	Inch.	Feet.	Inch.		
First.....	108	16	1	.....	.....
Second.....	44	.....	.....	.....	.....
Third.....	47	.....	.....	.....	.....
Fourth.....	21	.....	.....	.....	.....
Fifth.....	30	.....	.....	.....	.....
Sixth.....	22	.....	.....	.....	.....
Total.....	272	16	1	.....	.....
				637	8
				Net increase in service pipe in 1900.....	
				6611	
				Net loss of service pipe, altering 272 cons, 621	
				7	
				Net increase of service pipe in 1900.....	
				5990	
				Service pipe in use Dec. 31, 1899, .....42 Miles	
				3135	
				Service pipe in use Dec. 31, 1900.....43 Miles	
				3846	

Statement of Connections Made to December 31, 1900.

WARD.	IN PAVED STREETS NOT IN USE.					IN USE.					TOTAL.				
	SIZE IN INCHES.					SIZE IN INCHES.					SIZE IN INCHES.				
	3/4	1	1 1/2	2	4	Total.	3/4	1	1 1/2	2	2 1/2	3	4	6	Total.
First.....	140	.....	.....	1	.....	141	1464	20	.....	11	11	.....	17	.....	1664
Second.....	235	1	1	.....	1	238	2165	15	.....	27	16	.....	43	12	2516
Third.....	377	2	.....	.....	.....	379	1937	35	.....	25	27	1	26	4	2434
Fourth.....	199	1	.....	.....	.....	200	1654	31	3	23	25	.....	14	.....	1950
Fifth.....	74	.....	.....	.....	.....	74	1273	11	1	11	12	.....	5	.....	1387
Sixth.....	68	2	.....	2	.....	72	1383	17	.....	10	10	.....	7	.....	1499
Seventh.....	.....	.....	.....	.....	.....	.....	65	4	1	8	5	1	3	4	91
Total.....	1093	6	1	1	3	1104	9941	133	5	115	106	1	115	20	11541

Total number reported in 1899.....

Total number made in 1900.....

Removed and abandoned in 1900.....

Net increase in 1900.....

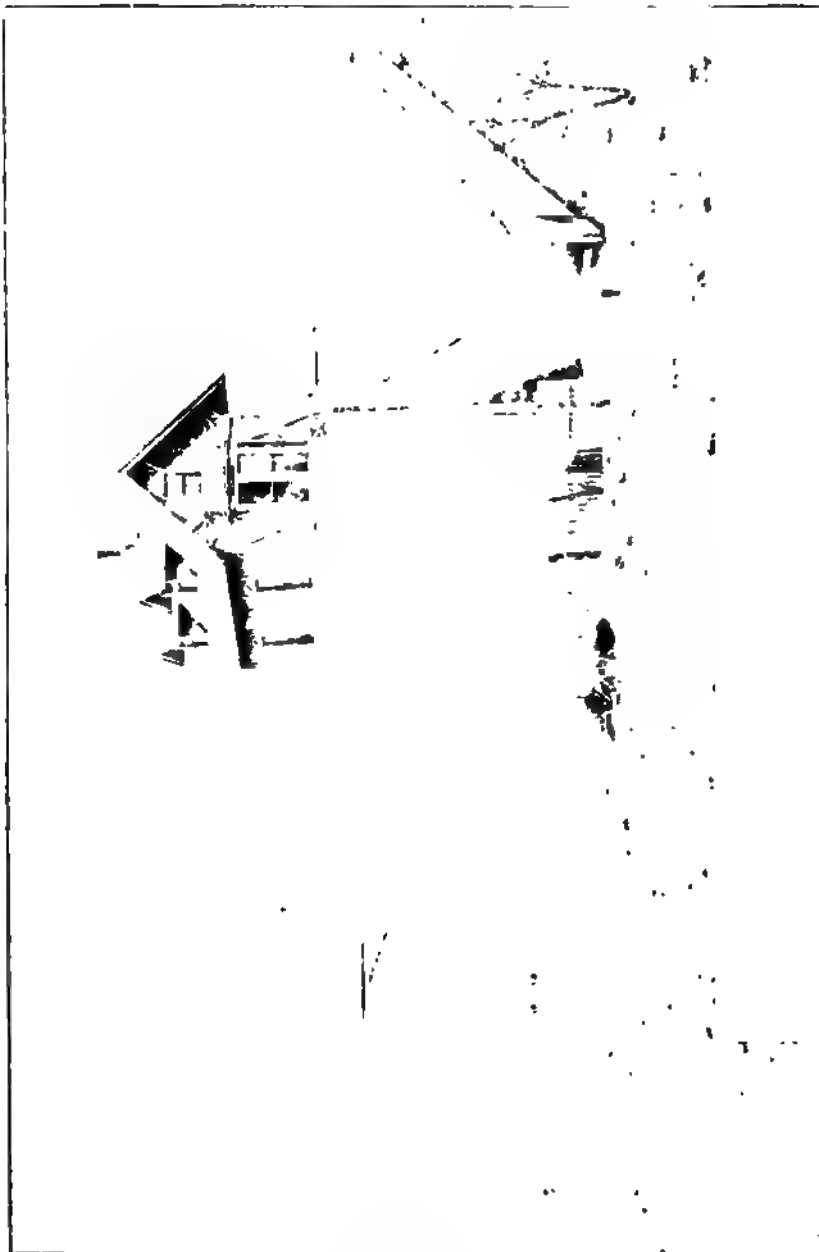
Total number December 31, 1900.....

STATEMENT OF METERS DECEMBER 31, 1900.

KIND.	IN USE.										NOT IN USE.										TOTAL.																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																		
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Crown.....	1	5	2	1	7	1	2	19	1	1

KIND.	GOOD.										POOR.										TOTAL.																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																													
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Crown	1	5	2	1	8	1	2	20	

1 1/8-inch Crown, entered as 2-inch last report, taken out at Bacon Novelty Co.; since then set at Walker Foundry Co.
One 3/4-inch Columbia exchanged for one 5/8-inch Columbia meter at People's Market Co.



RESERVOIR

ANALYSES OF WATER BY DR. WM P. MASON, TROY, N. Y.

LOCATION.	DATE.	RESULTS IN PARTS PER MILLION															Remarks.	
		Taste.	Odor.	Color.	Sediment. Quickly Falling.	Turbidity.	Free Ammonia.	Albuminoid Ammonia.	Chlorine.	Nitrogen in Nitrates.	Nitrogen in Nitrites.	Oxygen required to oxidize organic matter at 21° F.	Hardness. (As parts of Ca Co 3)	Alkalinity. (As parts of Ca Co 3)	Total Solids.	Bacteria. Per Cubic Centimetre		Bacillus. Coli Communis.
Lake Erie, 2½ miles from shore.	1900 June.....	5	none	.3	none	2.7	.084	.046	2.	.137	.0005	1.35	83.6	47.5	71.	sample spoiled	absent	See letter below.
	September...	24	none	none	slight	none	.047	.115	6.5	.075	trace	1.75		50.	145.		none	See letter below.
	November...	29	none	none	.1	none	10.	.012	.022	6.	.025	trace	1.35		47.5	137.	80.	none
New Intake.	June.....	5	none	.3	none	2.7	.155	.146	2.	.137	.002	2.5	94.8	50.	115.	sample spoiled	present	
	September...	24	none	none	slight	none	.073	.133	9.5	.0625	slight	2.7		50.	105.		present	
	November....	29	none	none	.1	18.	.081	.048	8.	.087	.001	2.75		47.5	171.	2450.	present	
Reservoir.	June.....	5	none	.3	none	2.7	.099	.112	2.	.137	.002	2.95	89.76	45.		sample spoiled	absent	Floating throughout
	September...	24	none	none	see re- marks	none	.042	.199	9.5	.05	none	2.4		45.	129.		Somewhat doubtful but prob- ably none.	the sample were nu- merous fragments or reds of Oscillaria.
	November...	29	none	none	.1	5.	.028	.060	8.	.025	trace	2.45		47.5	146.	645.	present	No Oscillaria present.

TROY, N. Y., June 14, 1900.

I have just finished the examination of the samples of Water recently sent me, and enclose the result. You will observe that there is a material difference between the Lake Water and those from the Bay. This difference being in favor of the Lake. What I particularly note, however, is that the bacillus coli communis, which is present in both the intake samples, is entirely absent in the reservoir sample. This is interesting, as tending to show that objectionable organisms do not survive the reservoir storage. Should this particular difference be shown to be fairly constant it would be a strong indication of the efficiency of your present establishment, and it would bring in question the wisdom of making any change whatever in your present method of securing water.

From the way in which the jelly flasks arrived I fear you must have had trouble in making the sowings. The blue jelly arrived in an entirely useless condition. I do not set any value upon the total count of bacteria for these samples.

Yours very truly,

WM. P. MASON.

TROY, N. Y., October 12, 1900.

Permit me to hand you herewith the analytical results for the Water samples taken September 24th. You will observe that the Lake Water of that date contained no bacillus coli communis. Both the intake waters contained that germ. The reservoir water was somewhat doubtful so far as that item is concerned, the culture jelly having behaved badly. There is no question, however, of the very great improvement obtained by reservoir storage. With reference to the thread-like particles floating in the reservoir water, they all consist of a growth known as Oscellaria. They will not give you any trouble in all probability, as they are not productive of objectionable tastes and smells. They are sometimes observable floating like minute green stars upon a surface of lake waters. Of course, they will collect in patches such as you describe. I have no sample of the sea weed you speak of as occurring in Lake Erie, but I strongly doubt if such weed bears any relation to the Oscellaria of the reservoir. I should be glad to hear anything further you may have to say with reference to its continued growth.

Yours very truly,

WM. P. MASON.

ANALYSES OF WATER BY DR. WM. P. MASON, TROY, N. Y.
*Kensseler Polytechnic Institute,
 Department of Analytical Chemistry*

LOCATION.	DATE.	RESULTS IN PARTS PER MILLION.																Remarks.		
		Taste.	Odor.	Color.	Platinum Scale.	Sediment.	Quickly Falling.	Turbidity.	Free Ammonia.	Albuminoid Ammonia.	Nitrogen in Chloride in 1 liter.	Nitrogen in Nitrates.	Nitrogen in Nitrates.	Oxygen required to oxidize organic matter at 21° F.	Hardness. (As parts of Ca & Mg per 100 lbs. of water.)	Alkalinity. (As parts of Ca & Mg)	Total Solids.		Bacteria. Per Cubic Centimetre.	Bacillus Coli Communis.
Lake Erie.	February...	4 none	none	.08	none	none	none	15	.03	.127	8.	.2	.001	1.2	...	50.	152.	5627.	present	See letter below.
New In-take.	February...	8 none	none	.08	none	none	none	6.	.08	.112	8.5	.2	.004	2.1	...	50.	135.	1209.	a few present.	See letter below.
Reservoir.	February....	8 none	none	none	none	none	none	1.	.07	.155	8.5	.2	.0025	2.	.....	50.	143.	410.	none	See letter below.

TROY, N. Y., February 16, 1901.

Commissioners of Water Works, Erie, Pa. :

Gentlemen — Permit me to hand you herewith the analytical results for the samples of Water taken February 8th. The water of the new Intake is decidedly superior to the Lake Water of that date, both in appearance and in composition. It is free from the fine silt that causes marked turbidity in the Lake Water; it contains a smaller number of Bacteria and fewer Gas-forming organisms. I am still of the opinion that it would be wiser for you to draw your raw water from the present source, and the establishment of an intake crib in the Lake. I note that the Reservoir sample of February 8th shows as a result of storage. You will observe the absence of Bacillus Coli Communis, which is a matter of importance. To my mind any future studies you might undertake should be directed towards determining the best possible treatment of your present supply, to the entire exclusion of all consideration of Lake Water. The question to be determined being the extent to which your reservoir storage can be depended upon for improvement of the raw water, and a consideration of the form of such supplementary purification as might be found to be required.

Yours very truly,

WILLIAM P. MASON.
 The above analysis was received from Doctor Mason after the Annual Report was placed in the hands of the printer, and is published herewith in order to give the public the latest information on the subject.

DRINKING FOUNTAINS FOR MAN, HORSE AND DOG,
Manufactured by J. L. Mott Iron Works, New York and Chicago.

STYLE.	DATE OF INSTALLATION.	WHERE LOCATED.
No. 1.....	October 26, 1894.....	South Park Row between State and French streets.
No. 2.....	June 13, 1894.....	Turnpike and Southwest corner State street.
No. 2.....	June 16, 1894.	Parade and Southeast corner Tenth street.
No. 2.....	July 3, 1895.....	State and Southeast corner Eighteenth street.
No. 2.....	July 26, 1895.....	Parade, East Side, between Twelfth and Thirteenth streets.
No. 2.....	October 2, 1895.....	State, East Side, between Third and Fourth streets.
No. 2.....	June 16, 1896.....	Chestnut and Southeast corner Eighteenth street.
No. 2.....	July 31, 1897.....	Peach and Southeast corner Twenty-sixth street.
No. 2.....	August 5, 1897.....	Eighth street, Northwest corner Cranberry street.
No. 2.....	August 14, 1900.....	Peach and Lakeside Park.
No. 3.....	August 22, 1900.....	Water Works Park.

Style No. 1—Square base; ornamental top, with square sides; three places for man, one for horses.
Style No. 2—Square base; oval sides, with plain top; one place for men, one for horses, two for dogs.
Style No. 3—Flat base; oval sides, with plain top; one place for man.

Comparative Statement of Water Rates in Twenty-Seven Cities in the United States.

CITY.	Population.	WATER WORKS SYSTEM.	METER.			RATES.				TOTALS.
			Flat.	Lowest.	Highest.	ASSESSED.				
						Family.	Bath.	Water Closet	Sprinkling.	
Albany, N. Y.....	100,000	Gravity & Pumping	8	.....	.....	\$18 00	.....	\$ 2 00	.....	\$20 00
Allegheny, Penna.....	125,000	Pumping,	10	.....	.....	16 25	\$ 3 00	9 00	\$ 5 50	33 75
Boston, Mass.....	520,000	Gravity & Pumping	.....	10½	18½	8 00	3 00	10 00	5 00	26 00
Cambridge, Mass.....	87,000	" "	.....	10	30	8 00	4 00	5 00	5 00	22 00
Chicago, Ill.....	1,750,000	Pumping,	.....	8	10	14 50	.....	3 00	3 00	20 50
Cincinnati, Ohio.....	406 000	"	.....	8½	20	7 50	2 70	8 00	8 94	27 14
Cleveland, Ohio.....	370,000	"	5½	.....	.....	6 50	2 00	4 00	1 00	13 50
Dayton, Ohio.....	85,000	"	.....	7	8	6 00	2 00	3 50	6 64	18 14
Des Moines, Iowa.....	68,000	"	.....	10	30	6 75	3 00	5 00	7 50	22 25
ERIE, PENNA.,	55,000	"	.....	4	20	4 00	3 00	4 50	3 00	14 50
Fall River, Mass.....	98,000	"	.....	10	28	10 00	5 00	8 00	6 00	29 00
Grand Rapids, Mich.....	90,000	"	.....	4½	20	6 00	3 00	5 00	11 29	25 29
Harrisburg, Penna.....	60,000	"	.....	2½	13½	10 50	4 00	3 00	2 00	19 50
Indianapolis, Ind.....	169,155	"	.....	6	20	9 00	3 00	5 00	7 10	24 10
Lancaster, Penna.....	40,000	"	5	.....	.....	6 00	3 00	6 00	5 00	20 00
Lawrence, Mass.....	54,500	"	.....	8	20	5 50	3 40	4 40	3 30	16 60
Lowell, Mass.....	90,000	"	.....	13½	18½	6 00	3 00	6 00	3 00	18 00
Milwaukee, Wis.....	270,000	"	6	.....	.....	10 00	3 00	3 50	17 42	33 92
Philadelphia, Penna.....	1,300,000	"	4	.....	.....	5 00	3 00	2 00	5 00	15 00
Pittsburg, Penna.....	300,000	"	.....	8	20	13 00	1 00	6 00	8 00	28 00
Providence, R. I.....	150,000	"	.....	15	20	6 00	5 00	8 00	5 00	24 00
Reading, Penna.....	87,735	Gravity & Pumping	.....	2½	50	4 50	2 50	4 00	9 00	20 00
Rochester, N. Y.....	170,000	" "	.....	10	14	5 00	2 00	3 00	4 00	14 00
Saginaw, Mich.....	52,000	Pumping.	.....	6	11	9 00	3 00	4 00	3 00	19 00
Springfield, Mass.....	55,000	Gravity,	.....	7	30	8 00	4 00	6 00	5 00	23 00
Syracuse, N. Y.....	133,000	"	.....	4½	18½	5 00	4 00	6 00	6 00	21 00
Worcester, Mass.....	102,000	"	.....	15	25	7 00	5 00	6 00	5 00	23 00

Basis of Comparison: } Building—Two stories high; 10 rooms; assessed valuation \$1,500.00 to \$3,000.00.
Family—Six persons. Three faucets and three sinks allowed with each family.
Fixtures—One bath; two water closets, and faucet for sprinkling.
Lot—Inside lot; 41½ feet front on a 60-foot street; 165 feet or less in depth.

ERIE, PENNA.—Family, \$4.00. Bath tub, \$3.00; each additional, \$1.50. Water closet, \$3.00; each additional, \$1.50.
Sprinkling, 41 feet front or less, \$3.00; each additional foot front, 5 cents. For meter rates see page 61.

- ALBANY, N. Y. Temporary dwellings on a lot from 40 feet to 30 feet wide, \$15.00; on each bath tub and water closet and sprinkling, each bath and closet above one, \$2.00.
- ALLEGHENY, PENNA.—Six-room house, \$10.25; each additional room, \$1.50. Each bath tub, hot and cold water, \$5.00. Water closets, not less than \$2.00, nor more than \$10.00; each additional closet, $\frac{1}{2}$ rates. Street washer, \$1.00 to \$10.00.
- BOSTON, MASS.—Family, every dwelling-house shall be charged, when it is valued for the assessment of taxes at \$30.00 or any sum less, and occupied by one family only, \$5.00; more than \$50.00 and not more than \$1,000.00, \$6.00; and for every additional \$1,000.00 or fractional part thereof, \$1.00, until the valuation for the assessment of taxes shall amount to \$25,000.00. Bath tubs, \$5.00 each. Water closets, each, \$5.00. Sprinkling, \$5.00.
- CAMBRIDGE, MASS.—Family, first faucet, \$4.00; each additional faucet, \$2.00. First water closet, \$1.00, each additional, \$2.00. Sprinkling, less than 5,000 feet, \$5.00.
- CHICAGO, ILL.—Two-story dwelling on a lot from 40 to 44 feet wide, \$14.50, which carries with it one each bath tub and water closet, each additional, each, \$3.00. Sprinkling, \$3.00.
- CINCINNATI, OHIO.—Nine to 10-room house, \$7.50. Each bath tub, \$2.70. Each water closet, \$4.00. Sprinkling, 1 cent per square yard.
- CLEVELAND, OHIO.—Dwellings, one two or three rooms, \$3.00; each additional room, 50¢. Bath tubs, each, \$2.00. Water closets, each, \$2.00. Sprinkling, lot 60 feet or less in front, 2-inch connection, \$1.00.
- DAYTON, OHIO.—Dwellings, six room 1 tub, \$1.00. Water closet, \$1.50; each additional, \$1.00. 25 feet front or less, 1 1/2 inch connection, \$1.00; each additional square yard on premises, 50¢.
- DES MOINES, IOWA.—Family—Dwelling, six rooms or less, \$4.00; 6 to 9 rooms, each, 75¢, over 9, each, 50¢. Bath tub, \$5.00 for first one, \$2.00 for each additional. Water closet, for first one, \$3.00, for each additional, \$2.00. Sprinkling, 70 feet front, \$7.50; each additional foot, 10¢.
- FALL RIVER, MASS.—Family, first faucet, \$5.00; each additional faucet, \$2.50. Bath tub, first one, \$5.00; each additional one, \$4.00. Water closet, first one, \$5.00; each additional one, \$3.00. Sprinkling, where nozzle not exceeding 2-inch diameter is used, \$6.00.
- GRAND RAPIDS, MICH.—Family, four persons or less, \$4.00; each additional person, 50¢. Bath tubs, four persons or less, one or more tubs, \$2.00; each additional person using same, 50¢. Water closets, four persons or less, one or more, \$4.00; each additional person using same, 50¢. Sprinkling, for each 1,000 sq. ft. of floor, 25¢. Estimate, lot 40 x 100 and 1/2 on each lot street, 50¢ sq. ft. Say buildings equal 100 sq. ft. (Eng. for remainder, add sq. ft.)
- HARRISBURG, PENNA.—Family, first one plug, 2-story house on street, \$9.50. Sink, \$2.00. Bath tubs, \$4.00. Water closets, \$3.00. Sprinkling, \$2.00.
- INDIANAPOLIS, IND.—Family, 3 rooms, \$4.00; 4 rooms or less, \$5.00; each additional room, \$1.00. Bath tub, first one, \$1.00; each additional tub, \$2.00. Water closet, first one, \$3.00; each additional closet, \$2.00. Sprinkling, 30 feet and under, \$6.00; each additional foot over 30 ft. 10¢.
- LANCASTER, PENNA.—Family, two-story house, \$4.00. Bath tub, \$3.00 each. Water closet, \$1.00; each. Sprinkling, \$5.00 per season.
- LAWRENCE, MASS.—Family, five persons or less, \$5.00; each additional person, 50¢. Bath tub, five persons or less, \$3.00; each additional person to 12, 40¢; five persons or less, \$2.00. Water closet, 5 persons or less, \$4.00; each additional person, 40¢. Sprinkling, under 25 ft. front, \$2.50; each additional foot up to 70 feet, 06¢.
- LOWELL, MASS.—Family, six persons, \$6.00; each additional person, 50¢. Bath tub, each person residing in house, 50¢, but no charge less than \$2.00. Water closets, each person residing in house, 50¢—nothing less than \$4.00. Each additional closet, \$2.00. Sprinkling, \$3.00.
- MILWAUKEE, WIS.—Family, five or six rooms, \$6.00; each additional room, \$1.00. Bath tub, each, \$3.00. Water closets, first one, \$2.00; each additional one, \$1.50. Sprinkling—for sprinkling sidewalks and half streets only, for 25 feet front or less, \$4.00; for each additional foot, 15¢. Lawns or gardens, from May 1 to Nov. 1 only, and not to exceed three (3) hours each day, for each 1,000 square feet or less, \$2.50. No lawn sprinkler or street washer shall be charged separately without charging for all buildings and fixtures on said premises. Street washer in this case would be \$6.40, lot would be for 5,400 sq. ft. four buildings 2,400 sq. ft., remainder, 4,400 sq. ft. at \$2.50 per 1,000 sq. ft.—\$11.02.
- PHILADELPHIA, PENNA.—Family, \$5.00. Bath tubs, each, \$3.00. Water closets, each, \$1.00. Sprinkling, \$5.00.
- PITTSBURGH, PENNA.—Family, one room, \$2.00; each additional room, \$1.00. Sink, each, \$1.00. Bath tubs, each, \$1.00. Water closets, self-closing, each, \$3.00. Sprinkling, wash pan, \$3.00; lawn sprinkling, \$5.00.
- PROVIDENCE, R. I.—Family, \$6.00. Bath tub, first tub, \$5.00; each additional, \$1.00. Water closet, first closet, \$5.00; each additional, \$3.00. Sprinkling, season, \$5.00.
- READING, PENNA.—Family, \$4.50. Bath tub, first tub, \$2.50; each additional, \$2.00. Water closets, each, \$2.00. Sprinkling—permission to sprinkle streets, \$4.00, lawn sprinklers (April to October), each, \$5.00.
- ROCHESTER, N. Y.—Family, assessed valuation at 100.00 to \$3,000.00, \$5.00. Bath tub, first tub, \$2.00; each additional, \$1.00. Water closet, first closet, \$2.00; each additional, \$1.00. Sprinkling, 50 feet frontage or less, \$4.00; each additional foot front over 100 feet, 50¢; hose attachment over two, each, \$2.00.
- SARASOTA, MICH.—Family, 6 persons, 3 rooms, \$3.00; 7 or 8 persons, 10 rooms, 50¢, each. Water closets, each, \$2.00. Additional, 50¢. Sprinkling, 50 feet frontage or less, \$4.00; each additional foot front over 100 feet, 50¢; hose attachment over two, each, \$2.00.
- SARASOTA, MICH.—Family, 6 persons, 3 rooms, \$3.00; 7 or 8 persons, 10 rooms, 50¢, each. Water closets, each, \$2.00. Additional, 50¢. Sprinkling, 50 feet frontage or less, \$4.00; each additional foot front over 100 feet, 50¢; hose attachment over two, each, \$2.00.
- SARASOTA, MICH.—Family, 6 persons, 3 rooms, \$3.00; 7 or 8 persons, 10 rooms, 50¢, each. Water closets, each, \$2.00. Additional, 50¢. Sprinkling, 50 feet frontage or less, \$4.00; each additional foot front over 100 feet, 50¢; hose attachment over two, each, \$2.00.

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WEST END OF PUMPING STATION AS IT APPEARED ABOUT TEN YEARS AGO.

Q⁴W

B'D. JUL 29 1913

